TECHNOLOGY AND TRUST;
HOW NEW COMMUNICATION TECHNOLOGY IMPACTS ELECTRIC UTILITIES DURING AND AFTER NATURAL DISASTERS

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by

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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

TECHNOLOGY AND TRUST:
HOW NEW COMMUNCIATION TECHNOLOGY
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AFTER NATURAL DISASTERS

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and hereby certify that, in their opinion, it is worthy of acceptance.

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DEDICATION

I dedicate this paper to my wife, Wendy, who has been exceptionally supportive throughout the process, and to my daughter, Abigail, who made her appearance in this world during the thesis process. I love you both.

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ABSTRACT

This study examined how the medium an electric utility uses to communicate during a disaster effects organizational reputation and how location (rural vs. non-rural area in America) effects organizational reputation based on communication during a disaster.

A total of 154 participants were asked to read a scenario in which a utility was communicating outage information due to a disaster. Respondents were randomly assigned to receive a scenario where the utility was using either Facebook or an Interactive Voice Response (phone system) to communicate. They were asked to respond to six statements using a five-item Likert scale (*strongly agree – strongly disagree*).

The study found that regardless of the medium used to communicate, there was no significant effect on organizational reputation. The study also found that whether a participant lived in a rural area in the United States or not, location did not have a significant effect on organizational reputation.

Chapter 1

Introduction

On October 29, 2012, Hurricane Sandy made landfall on the Eastern coast of the United States. The "Superstorm," as it would come to be known, was blamed for the death of 50 people, cost roughly $36.8 billion in repair, protection and prevention costs ("Hurricane Sandy Fast Facts," 2013) and left more than 7.5 million people without power for days after the storm (Center for Disaster Philanthropy, 2013).

In late February, 2013, Winter Storm Rocky swept through the central plains and Midwestern United States. Winds of up to 50 mph and heavy, wet snow caused the deaths of six people, leaving hundreds of thousands of people from Oklahoma to Michigan without power, some for several days ("Winter Storm Rocky Blamed for Six Deaths," 2013).

On May 20, 2013, a category EF5 tornado – containing winds of 200 miles per hour or more – ripped through the Oklahoma City, Okla., suburb of Moore. The storm left 24 people dead and injured 100 more, dealt damage to more than 2,000 homes that was estimated to result in more than $1 billion in insurance claims and left more than 30,000 people without power for days after the storm ("Oklahoma tornado," 2013).

These three natural disasters are quite different in their nature and they happened in three different parts of the United States. However, all three storms led to billions of dollars in physical damage and many people lost their lives as a result of these disasters. While losing power due to a major disaster may seem small compared to the other damages, keeping the lights on or getting the lights back on as soon as possible is a major

part of disaster response. While customers await crews to restore power to their homes, that may not be a crew's first priority. Crews have to work to get power back to major infrastructure points along an electrical grid, such as fire and police stations or water filtration plants, so that any other restoration efforts can proceed as quickly and efficiently as possible (Sawyers, 2012).

Electric utilities are constantly monitoring the weather. Along with system data, they have weather patterns displayed throughout their offices so they will be prepared for potential damage and to protect those that they serve during a crisis situation. When crises strike, many organizations have to prepare for reputational damage by deploying appropriate crisis communication strategies. For electric utilities, crisis communication can be essential in not only maintaining a good relationship with stakeholders, but also helping prevent casualties prior to a natural disaster or keeping their customers safe during the restoration process.

Utilities operating under the electric cooperative business model tend to maintain a close relationship with their customers. Throughout the electric cooperative industry, this is commonly known as the "Cooperative Difference (North Carolina Electric Cooperatives, 2014)." As a cooperative, the customers that purchase electricity also serve as owners – known as members instead of customers - so many cooperative employees feel an extra connection to their members, and the members have a greater connection to their electric providers than customers served by Investor Owned Utilities, or IOUs. The difference between a cooperative and an IOU is that the IOU reports to stockholders and are required to make a certain amount of money at the end of the year. Cooperatives,

however, return any profits they make to their members in the form of capital credit checks.

Most electric cooperatives in the United States are located in rural areas. Rural electric cooperatives serve more than 12 percent of the electric meters in the United States, or around 42 million people across 2,500 counties ("Co-op Facts & Figures," 2014). Those in more urban areas tend to be served by the IOUs or municipalities. Location is a significant factor, because of the differences in the way the utilities serve their customers. Rural electric consumers are mostly served by electric cooperatives, operating under a vastly different business model than IOUs and municipalities. This could have an effect on how much they trust their electric cooperative and how disaster communication, and the technology used to communicate, effects them.

As technology continues to progress, prediction of where disaster is going to strike has gotten better. However, the scope and damage of any type of natural disaster is unpredictable. The only thing an organization can do is prepare. Technology can help weather experts predict where disaster may strike, but technology can also help electric utilities prepare to face a disaster and help those in harm's way do their best to stay safe during a bad storm.

New forms of communication technology have enhanced the connection all of these utilities have with their members or customers. Technologies like social media, text messaging, interactive voice response (IVR), Web-based notifications and smartphone apps allow utilities to create a direct, two-way connection with their members, letting utilities pass information to the consumer as easily as they can receive it. These

technologies have the opportunity to help better notify members of impending crises such as storms and help identify which customers are without power following a storm's passing.

These methods of communication are relatively new, however, and they are still in an infantile state of deployment at many utilities across the United States. There is an implication, though, that these technologies can help electric utilities reach their members in a faster and more effective way than they've ever been able to before. With more efficient notification, there's a potential for a utility to boost their reputation and trust in the eyes of their members, or lose trust rapidly if an inappropriate type of communication or message is selected.

The purpose of this study will examine the impact of two types of communication technologies on electricity users in order to begin to understand if the medium is as impactful as the message when communicating crisis information. Also, this research seeks to understand whether the medium has different effects on organizational reputation between rural electricity users vs. urban electricity users when communicating crisis information. This research will help begin to build a list of best-practices for deploying communication technology, especially during a crisis, and will add to a growing body of knowledge about crisis response and how technology can aide in maintaining an organization's reputation.

CHAPTER 2

Literature Review

With the aid of technology, organizations are communicating with their customers in ways that were never-before possible. One of the businesses experiencing the benefits of connectivity is the electric utility industry. Customers can use their smart phones, tablets and PCs to remain in contact with their utility and pay their bill with the click of a button, or even let the organization know when service has been interrupted.

Maintaining a constant connection with the consumer is imperative when a crisis strikes an organization. Constant connection allows an organization to quickly disseminate important information to their stakeholders; information that could keep them safe from harm or keep them informed with updated information on the crisis and when they can expect to have service resumed.

One of the biggest crises that electric utilities face is mass disruption of service due to a storm or other natural disaster, such as a hurricane, earthquake, tornado, snowstorm or flooding. When disaster strikes, it's imperative an organization understand how to respond to the disaster effectively, as stakeholder lives could be on the line.

Situational Crisis Communication Theory and Disaster

In 2007, W. Timothy Coombs presented a theory that addresses an evidence-based approach to crisis communication called Situational Crisis Communication Theory (SCCT). In developing SCCT, Coombs identified the effects of a set of crisis-response strategies in an empirical way rather than analyzing the case in which crisis response

strategies were employed (Coombs, 2007). Coombs (2009) pointed out that a lot of crisis communication studies were conducted through speculation or an individual case analysis, which causes the lack of theoretical development in the entire field of crisis communication. In this regard, there was a need for further research on the basis of empirical evidences (Coombs, 2009).

Along with an attempt to provide evidence-based crisis-response strategies, SCCT attempts to understand how key pieces of the situation attempt to influence a stakeholder's attribution of responsibility for a crisis. Understanding the factors that lead to how a stakeholder is likely to respond to a crisis situation will inform a crisis communicator on which response strategy is going to lead to the best result in attempting to protect an organization's reputational assets during a crisis (Coombs, 2007).

The key piece of the puzzle with SCCT is the attribution of responsibility for a crisis. Coombs' SCCT theory is largely based on attribution theory, which is described by Bernard Wiener through Coombs as the idea that people need to attribute blame for an event, especially a negative event (Coombs, 2007). Building upon Wiener's attribution theory, SCCT attempts to determine the reputational threat that results from the attribution of crisis responsibility and based on the severity of the crisis, determine the best response to protect the organization's reputation.

While Coombs' didn't officially publish the development and application document for SCCT until 2007, his work on the theory began more than a decade prior. Responding to a challenge by James A. Benson in a 1988 document called "Crisis revisited: An analysis of the strategies used by Tylenol in the second tampering episode,"

Coombs, along with Sherry Holladay, began work on what would eventually morph into SCCT more than 10 years later (Coombs & Holladay, 1996).

In the 1988 paper, Benson challenged researchers to revisit crisis communication. Specifically, he challenged researchers to discover the various types of communication strategies that organizations use to respond to a crisis and attempt to find crisis response strategies that fit these various crisis types (Coombs & Holladay, 1996). When Coombs and Holladay dug into the research that had been done to meet Benson's challenge, he discovered that the first part had been met in great detail, but there had been little to no work done that satisfied the crisis response/crisis type portion of Benson's challenge (Coombs & Holladay, 1996).

Coombs and Holladay went about creating an exploratory study that they hoped would help further the research in matching crisis response to crisis type. The duo settled on a pair of theories that they combined to help answer the challenge. The first, attribution theory, was combined with neoinstitutionalism, which relies on the legitimacy of an organization. Neoinstitutionalism posits that an organization's legitimacy is based on that organization's stakeholders believing that what it is doing is good or right (Coombs & Holladay, 1996).

The combination of neoistitutionalism and attribution theory created a "symbolic approach to crisis management (Coombs & Holladay, 1996, p. 283)," labeling the communication strategies as "symbolic resources (Coombs & Holladay, 1996, p. 283)." The combination of these two theories provided three means to affect organizational image through crisis strategy: 1. Convince stakeholders there is no crisis. 2. Try to

convince the stakeholders to see the crisis in a less negative manner. 3. Try to have stakeholders view the organization more positively. These are the early responses to crisis that would become the base for SCCT (Coombs & Holladay, 1996).

The duo also created four crisis types by crossing external control and intentionality in a 2 x 2 matrix. 1. Accidents (unintentional and internal). 2. Transgressions (intentional and internal). 3. Faux Pas (unintentional and external). 4. Terrorism (intentional and external)(Coombs & Holladay, 1996).

To test this new idea, Coombs and Holladay created four crisis scenarios and matched them with crisis response strategies then presented the cases to 116 students at a Midwestern university along with a survey. What they found was extremely significant, because it lead to the creation of SCCT. The results showed that the more stakeholders attribute responsibility for a crisis to an organization, the greater the reputational damage will be to that organization. The results also showed that appropriate crisis response strategies can lessen the reputational damage of a crisis by either altering the attribution or mitigating the affective feelings of the stakeholders in response to a crisis (Coombs & Holladay, 1996).

A 2002 study by Coombs and Holladay, "Helping crisis managers protect reputational assets," produced the idea of crisis "clusters" rather than individual crisis types. In the 2002 study, Coombs and Holladay tested 13 individual crisis types matched with eight crisis-response strategies. The strategies were matched along what they called the "defensive-accommodative continuum," or the greater the responsibility for the crisis, the more accommodative the response needs to be (Coombs & Holladay, 2002).

What they discovered by doing this was that certain individual crises were met with the same level of responsibility. The 13 individual crisis types tested each fell into one of three "crisis clusters," which would become the base for SCCT, the victim cluster, the accidental cluster and the preventable cluster (Coombs & Holladay, 2002). While every crisis is going to be different for every organization, each of them will land in one of these clusters.

While all crises may fall into one of these particular buckets, it's important to keep in mind that the reputational threat factors have a negative correlation to one another. For instance, if an organization experiences a victim-level crisis, with past crisis history or a negative standing with the public, attribution for the crisis could be much higher. Conversely, if an organization is largely responsible for a crisis, but is in good standing with the public and has a relatively low history of crisis, attribution may be not as severe by the stakeholders (Coombs, 2007).

While it would be nearly impossible for an electric utility to be blamed for a patch of bad weather, Coombs' SCCT theory posits that if an electric utility is viewed through the public eye as not taking care of their stakeholders or if they've had trouble keeping the lights on, when a storm rolls through, blame could be placed on the utility based on prior negative experiences.

Coombs' SCCT takes all types of crises into account, grouping them into clusters with the idea that certain crisis responses will have the same effect on multiple, different crisis scenarios. Coombs addresses natural disasters in his research, settling them into the lowest realm of the "victim" crisis cluster, but this may not always be the case. On the

surface, it seems that little blame could be placed on an organization, but in the case of several major storms, government organizations like the Federal Emergency Management Agency (FEMA) have taken a huge reputational hit. Following Hurricane Katrina, FEMA took a great deal of criticism for the lack of response which led to former Director Michael Brown accepting most of the responsibility (USA Today, 2006). SCCT was created to help an organization protect against a reputational threat. While a natural disaster can cause reputational damage to an electric utility if they do not respond properly, this type of crisis could cause irreparable physical damage to homes and stakeholders themselves, enhancing the reputational threat by adding more serious physical threat to the crisis.

In the case of electric utilities (and emergency services like police, fire and hospitals), weather – especially natural disasters – is cause for a larger concern than most other organizations. As first responders, these organizations have to be constantly aware, as well as constantly prepared, to deploy staff and resources to clean up after a storm, and to ensure that the people they serve are out of harm's way.

While an electric utility could face any number of crises, they have to deal with outages and potential damage due to storms multiple times per year. Many rural electric cooperatives face natural disasters in the spring and summer in the form of bad storms or tornadoes and in the fall in winter with heavy snows that can bring down power lines.

This research focuses on this natural disaster scenario. This allows us to control the type of crisis and study the effect that the medium has on organizational reputation during a storm.

Crisis Response Strategy and Communication Technology

Coombs' SCCT offers a systematic approach to responding to crisis in order to protect the organization's reputation. An electric utility can suffer irreparable reputational damage from the mishandling of a storm, but more importantly, their membership could suffer physical and emotional damage as well if they aren't aware of potential danger. Before an organization begins to rebuild its reputation, SCCT posits that the organization has to ensure stakeholders are safe from harm (Coombs, 2007).

The main tenant of SCCT is grasping the severity of a threat posed to an organization by an impending crisis. When bad weather starts to gather, a utility has to be ready to respond not only to a reputational crisis, but to a community disaster. While SCCT was developed to help organizations effectively respond to reputational threats, Coombs says that before those threats can be addressed, an organization must protect both the physical and psychological well-being of its stakeholders (Coombs, 2009).

SCCT defines three different types of organizational response strategies that communicators can use to respond to a crisis and reduce reputational threat: denial, diminish or rebuild. The right type of response strategy to be deployed depends on what cluster the crisis falls into and how the other crisis-response factors affect how responsibility for the crisis will be attributed to the organization (Coombs, 2007).

The 2002 study led Coombs & Holliday to their first attempt to articulate and test a "situational theory of crisis communication (Coombs & Holladay, 2002). This study not only helped Coombs and Holladay express an attempt at a situational approach, but added two of the most important aspects of SCCT, an organization's reputational history and the

severity of the damage dealt by the crisis (Coombs & Holladay, 2002). These two aspects are critical to SCCT, because they have a great effect on crisis response strategy. SCCT believes that the greater the attribution of the crisis responsibility, the greater the response needs to be. However, if an organization has been in good standing with the public and does not have a history of crisis, the public is likely to be more forgiving and a less-serious crisis response strategy can be deployed (Coombs, 2007). If the damage is severe, though, an organization that is even in good standing may need to deploy a stronger response because more stakeholders were affected or because the effects were more severe (Coombs, 2007).

In a separate study, Coombs tested the impact of past crisis history on an organization's current crisis communication. Using five real crises, he created scenarios matched with crisis response types and varying degrees of crisis history, paired them with a survey and tested it on students and the community at a Midwestern United States university. The study was focused more on what Coombs called "nonvictims," or those people not affected by a crisis, but that may be following it in the media (Coombs, 2004).

The study provided data that a history of past crisis did intensify the attribution of a current crisis and lowered the perceptions of an organization's reputation. Supporting SCCT, the study showed a positive correlation between reputational threat and attribution of responsibility. The more stakeholders attribute responsibility for a crisis, the higher the reputational threat is for an organization (Coombs, 2004).

This is where the addition of severity and crisis history is extremely important. If an organization is experiencing a crisis that fits into the "victim" cluster, but has a past

history of crisis, a more accommodative response strategy may be required. Conversely, if an organizational crisis falls in the accidental cluster and there is little to no history of crisis, a less accommodative response strategy may work (Coombs, 2007).

Studying crisis cause and effect for a decade led Coombs to produce SCCT in 2007, providing an empirical way for organizations to both assess and respond to a crisis by understanding what the stakeholders' response to the crisis and response strategies will be (Coombs, 2007).

SCCT has been tested and met with varying degrees of success. Claeys et al (2010) tested SCCT using a 3 x 3 factorial design matching crisis type to crisis response strategy. The study also measured a stakeholder's personal locus of control, theorizing that stakeholders with an internal locus of control will respond more positively to different response strategies than those with an external locus of control (Clayes et al, 2010). The locus of control portion of the study is significant, because it explains where people place the attribution for an event; that events are controlled by internal, personal factors or external, situational factors (Clayes et al, 2010).

Clayes et al designed a similar experiment to Coombs and Holladay, where they presented case studies to a group of university students along with a survey. The study didn't support all aspects of SCCT, showing that matching crisis response strategy to the type of crisis had the same or less effect than mismatched crisis and response strategies. They found that organizations using the "rebuild" strategy fared better than the organizations using the "diminish" strategy, regardless of crisis type (Claeys et al, 2010).

One other thing the Claeys study found was that a stakeholder's personal locus of control did have an effect on the impact of crisis response strategy, but only with certain response types. The "deny" strategy affected people with internal locus differently than people with external locus. The study also tested the diminish and rebuild strategies, but neither were affected by personal locus (Claeys et al, 2010).

A big part of SCCT is attempting to respond to crisis through the media, attempting to match the right response type with the crisis type and present that to the stakeholders through various news sources or other third-parties. At their 2012 Annual Meeting, the International Communication Association presented a case study that viewed the 2004-2005 National Hockey League (NHL) lockout that led to the loss of a full season through the lens of SCCT (Formentin, 2012).

The study looked at 258 articles presented during three major turning points in the 2004-2005 NHL Lockout to see how the crisis-response strategies presented in the newspaper matched how the NHL navigated the crisis. What the study found was that the principles of SCCT were upheld by the media coverage, actually allowing the NHL to shift responsibility of the crisis more heavily onto the shoulders of the NHL Players Association (Formentin, 2012).

Choi and Lin (2007) used a 2007 product recall by Mattel to test a modified SCCT model that includes emotion as a driving factor for crisis responsibility. Examining consumer responses in two online bulletin boards directed at parents, Choi and Lin discovered that certain "attribution independent" emotions were critical in crisis response strategy. What they discovered was that "alert" was the biggest and fastest-spreading

emotion during the Mattel product recall. What this means is, once consumers become alerted to a crisis, organizational reputation begins to decline, so deciphering the appropriate crisis type and deploying the appropriate crisis response strategy is critical (Choi & Lin, 2009).

One reason for the varying degree of SCCT success is that communications professionals may not always be "practicing what they preach (Kim et al, 2009)." Kim et al analyzed crisis response strategy over an 18-year period from 1991-2009. What they found was that there is an obvious gap in crisis communication practice and prescriptions provided in crisis communication research. Over that period of time, what Kim et al discovered was that some crisis response types were correctly deployed. Rebuilding strategies were deployed in many preventable-type crises, in conjunction with Coombs' recommendations. However, other crisis response types were also frequently deployed to combat preventable crises, like attacking-the-accuser. The attacking-the-accuser strategy should be deployed most effectively at the accident or victim level, where according to the study, it was not used very frequently at all (Kim et al, 2009).

Conversely, a quantitative review of crisis communication research over that same time period produced slightly different, and more positive, results for SCCT (Avery et al, 2010). This census of communication research looked at articles using SCCT and Benoit's Image Restoration Theory, another driver of the SCCT model. What the census discovered was that there has been an increase in use of the SCCT model in communication research from 1991-2009, with 60 percent of authors providing full support for the SCCT model following their research (Avery et al, 2010). One major point the census discovered was that there is a gap between contextual uses of SCCT in

research and actual, methodological application in actual crisis-communication scenarios (Avery et al, 2010).

Studies using SCCT have shown varying degrees of support for the theory, along with a bit of a disconnect between research and practical application of the theory. One reason may be, as Kim et al pointed out, that communications professionals haven't caught up with the best practices presented in crisis communication research.

Another possible reason for the disconnect between research and practice could be the one area where SCCT is lacking in theory. SCCT does a great job of determining what message should be presented for a crisis type, but the medium used to deploy that message is not addressed in Coombs' work on SCCT.

Coombs himself recognizes the limitations of his theory and has suggested that researchers begin to investigate new mediums in conjunction with SCCT. In a 2008 article posted on the Institute for Public Relations website, Coombs claimed that "there is a need to elaborate and build greater knowledge about crisis communications and new media with an emphasis on social media," explaining that various types of new media, from blogs to YouTube videos, can be effective ways of communicating during a crisis (Coombs, 2008).

Coombs also claims that social media can enhance the crisis response strategy into the post-crisis communication phase, because it will allow communication managers to evaluate the success or failure of the crisis response strategy (Coombs, 2008). One other thing that social media can enhance from a crisis communication standpoint is pre-crisis communication. As social and other new media allow a constant connection with

stakeholders, is reasonable to assume that pre-crisis communication can enhance organizational reputation, which will decrease the attribution of responsibility during a crisis and help an organization retain reputational capital as a crisis result.

While a lot of research has been conducted and is currently being conducted on communication and social media, research has started to take SCCT and social media into account as well. Through an examination of three exploratory case studies – the Japanese Tsunami, Kenneth Cole's Twitter failure and Hurricane Irene – Freberg and Palenchar determined that while various media do create different perceptions, it's beneficial for an organization to create an "inline" communication plan that addresses traditional media, digital storytelling and negotiation in the same plan. What Freberg and Palenchar discovered was that through social media, information travels fast, and it's hard to get ahead of messages when they're being sent through multiple channels and multiple voices. It's easy for rumors to spread. Deploying an inline communication strategy can help organizations better manage the various messages that can be created (Freberg & Palenchar, 2013).

Another aspect of using social media that came through in Freberg and Palenchar's study was the idea of "crowdsourcing." Crowdsourcing utilizes the power of the community to complete a process, where everyone pitches in and does their part, usually from a digital perspective. Crowdsourcing, though, from a communication standpoint has empowering effects for the consumer that will help them and the organization make it through the crisis. When an organization empowers the consumer to relay the appropriate messages or help spread the first tenant of SCCT, keeping people safe, those people then feel a greater sense of control of the situation (Freberg &

Palenchar, 2013). This, in turn, leads to a lowered sense of attribution of crisis responsibility on the organization, maintaining organizational reputation (Freberg & Palenchar, 2013).

This is an important finding that can impact how medium theory fits nicely into SCCT. The idea of crowdsourcing lends itself well to what electric utility communicators are attempting to do during a disaster, keep people both informed and safe. Utilities have to try and stay ahead of a storm as best they can, communicating every step of the way. Several new communication technologies can be beneficial in helping others spread the word by allowing members themselves to spread the word.

Liu et al (2011) propose an enhanced version of SCCT called the Social-Mediated Crisis Communication Model. This model, while similar to SCCT, theorizes that people turn to social media for three distinct things during a crisis: issue relevance, seeking or sharing information and emotional venting or support (Liu et al, 2011). Social media use increases during a crisis and there are some publics that assign a higher level of credibility to social media over traditional media when seeking information about a crisis, and previous research has shown both direct and indirect benefits of organizations using social media (Liu et al, 2011). However, most organizations haven't adopted social media and are not incorporating it into their social media plans. Only 29 percent of organizations even have a social media policy (Liu et al, 2011).

Liu et al developed the Social Mediated Crisis Communication Model as a way to properly communicate crisis information in the changing media landscape. The model is divided in two parts, communication between the organization and three publics: social-

media influencers and creators, social-media followers that largely consume information from the influencers and social-media inactives that receive information posted by influencers indirectly through traditional media or third-parties. The second part of the model is the recommended crisis-response strategies (Liu et al, 2011).

If Coombs is correct, and pre-crisis communication is important and enhanced by new communication technology, electric utilities should be using new communication technology to communicate normally, before disaster strikes, in order to build reputational capital and trust. Building a positive relationship during times without crisis will help electric utilities more effectively communicate and take less of a reputational hit when disaster strikes.

While Coombs' theory does state that it is important for an organization to reach its stakeholders through the media, because that is where they will receive the majority of the information, SCCT leaves the area of how to address the stakeholders largely unaddressed. The media is still an important way to respond to a crisis, but with the growth in communication and media technology providing a direct connection to the stakeholder, which method of communication is the most effective? How does continuous use of new communication technology before a crisis help to build an organization's "reputational capital (Coombs, 2007)" helping them avoid attribution of responsibility during a crisis?

Coombs realizes that SCCT for the modern age needs to be enhanced to meet the continually growing communication challenges of the 21st century. One way to help boost SCCT is to blend it with a different theory that helps take a look at not only the

message, but the medium used to send that message. Marshall McLuhan's "medium is the message" theory could help fill the gap in SCCT when combined to help enhance the theory and continue moving it forward.

The Medium is the Message

In the decade that it took Coombs to work through and produce SCCT, the world continued to spin. Technology continued to evolve through the 2000s and into the 2010s. New methods of communication were created to reach new audiences that desired an "always-on" method of communication through a device that could receive those messages 24 hours per day and that fit nicely into a pocket or purse.

When a crisis strikes, stakeholders are immediately looking for somewhere to attribute blame for that event (Coombs, 2007). According to the findings of Choi and Lin, we know that as soon as a customer is alerted to a crisis, that attribution starts to set in and organizational reputation starts to decline (Choi & Lin, 2009). Today, customers can get information almost immediately. According to Pew, 91 percent of American adults own a cell phone, and 56 percent of those are smartphones. 67 percent of cell phone owners check their phones for messages or alerts even when they don't get any kind of notification from the phone that there's a new message (Brenner, 2013).

This instantaneous access to stakeholders was not available at the time Coombs was developing and refining SCCT. It's reasonable to assume, then, that with inconsistent findings related to SCCT in practice, that perhaps the medium organizations use to deliver crisis response strategy could have an effect on the reception of that strategy.

In the early 1990s, WIRED magazine named Marshall McLuhan the "patron saint" of the magazine. McLuhan was responsible for proposing the idea that the medium is the message (McLuhan, 2000). McLuhan, in the 1960s, watched the rise of television as the dominant distributor of information. He claims that each medium that we use as humans are extensions of ourselves, and that the medium a message is delivered through is more important than the message being delivered, because we perceive messages coming from different sources in different ways (McLuhan, 2000).

Before watching television explode in the 1950s and 1960s, McLuhan proposed that humanity had moved from an oral tradition of storytelling to a more literate version of ourselves that was used to consume messages written on a piece of paper. His theory was that television, the new rising form of communication technology, was going to cause a social shift in the way messages were received, causing society to return to a more oral-centric culture of information sharing, as opposed to the literate, written-word based culture of the previous generation (Harrison, 2011).

McLuhan's argument was that the medium, as an extension of ourselves, enhances something we're already doing by accelerating and deepening the connection between people. He uses the electric light as an example, saying that it has enhanced our ability to play baseball by allowing us to play at night (McLuhan, 2000).

McLuhan was a social theorist, interested in how new media were going to affect how we connected as a society. His ideas weren't presented in scientifically-tested research, but more in the way of a theory about how society operates and how people

connect with one another. Because of the lack of scientific presentation, his ideas never took place and essentially died off almost completely by the 1980s (Harrison, 2011).

As technology continued to advance and computers became a large part of the communication process, McLuhan's ideas resurfaced and researchers started looking at them in a whole new light. McLuhan's ideas, that the medium is an extension of us and that we would function as a "global village," where people receive information at the exact same time, started to make a lot more sense not only from a social theorist perspective, but from a scientific, psychological perspective as well (Harrison, 2011).

At the 2011 Annual Meeting of the International Communication Association, the idea was presented that though McLuhan was not a scientist, his ideas could serve as the basis for studying the effect media has on societal change (Harrison, 2011). McLuhan proposed various ideas for how a medium impacted the message it was presenting, citing the different senses used to perceive a medium as helping to interpret that message. Technology available today can test exactly how a message is interpreted by the brain when perceived by a different sense (Harrison, 2011).

The idea is that the physiological way the brain interacts with a medium to receive a specific message has wider implications than just whatever the message is trying to relay. This cognitive process creates perceptual patterns in the brain, which are mirrored by personalities and generally extended into a society, in what McLuhan referred to as "sense ratios." Over time, these sense ratios begin to be adopted by a given society (Harrison, 2011).

New forms of technology can test these assumptions. Brain scans taken while subjects received messages through various mediums showed that comprehension of a message does not always take place at the center of the brain. Different mediums create different sensory experiences in the human brain, which by McLuhan's theory will have an effect on behavior in society. It's been shown that younger media consumers do exhibit different behaviors when it comes to reading and learning both positive and negative, like shortened attention spans, a greater ability to multitask and the seeking of immediate gratification from media use (Harrison, 2011).

Meyrowitz makes an attempt to not only build on McLuhan's theory, but move beyond him into a new age of medium as message thinking. In what he calls "medium theory," Meyrowitz focuses on studying the medium as the message by focusing on the characteristics that distinguish one medium from another. Meyrowitz also emphasizes that McLuhan was not a scientist and he did not present his ideas that way. Taken at face value at the time, it was easy for others to simply dismiss those ideas (Meyrowitz, 2001).

What McLuhan did was essentially present the world as he saw it. He listed society in his eyes. As Meyrowitz puts it, he wasn't like other scholarly mentors in that he didn't ask others to follow him. What did was throw out a "battle cry" and point people in that direction, urging people to explore the nature of technology not the messages sent by the different types of technology (Meyrowitz, 2001).

As computer mediated communication became more prevalent in society, researchers and psychologists heeded McLuhan's battle cry and began to examine the intricacies of technology to determine if the medium really was the message. Carr and

Stefaniak (2012) used warranting theory to test the influence of the medium vs. the message. Warranting theory attempts to explain how individuals form opinions by weighing the accuracy of cues. Cues that are deemed to have been created by a sender typically tend to be less reliable than cues independently created (Carr & Stefaniak, 2012). This is described as warranting value. Cues with a high warranting value are those that have been created by someone or something other than the sender, like a third-party or even system-generated cues. Low warranting value cues are those that are deemed as being created by the sender (Carr & Stefaniak, 2012).

In a 2x2 experimental email study, Carr and Stefaniak (2012) tested low warranting values shown through grammatical errors in the email along with high warranting values, shown as an email signature, to see how high-warrant cues affected low-warrant cues. What they discovered was that when an email was sent with grammatical errors but shown to have an email signature that said "sent from my iPhone," draft email responses created by the participants were more positive when the email signature was included, and participants indicated they thought the sender was more of a professional that those without (Carr & Stefaniak, 2012).

Medium can shape the perception of someone receiving a message. Even though the sender was completely fictional, people generated perceptions about this person based solely on the medium providing the message. Berger et al discovered similar results testing word of mouth advertising of brands through both asynchronous and synchronous communication (Berger et al, 2013).

Theorizing that asynchronous communication would lead to conversation about "more interesting" brands, Berger et al created three tests that paired asynchronous vs. synchronous communication, pitting "interesting" products like electronics against less interesting products like toothpaste. In all three tests, asynchronous communication, or communication that is not instantaneous, lead to conversations about the more interesting brands. Berger et al theorized this would be the case, because asynchronous communication allows people to stop and think about what they're going to say before they actually say it. The study recommends marketers pay attention to how they want to market products and the different aspect of the medium they need to use to sell (Berger et al, 2013).

Interested in social media, particularly Twitter, Lee and Shin (2012) took a look at Korean politicians and how Twitter enhanced their political relationship with their constituents. They found a gap in communication research where the effects of Twitter on political campaigns had been studied, but not in comparison with other media (Lee & Shin, 2012). Through an online survey, participants were presented with information through newspaper articles or an aggregation of tweets from former South Korean Minister of Health and Welfare Simin Rhyu, as he was a well-known and fairly polarizing politician, and asked to share their thoughts about the content (Lee & Shin, 2012).

The study showed that the participants reading the Twitter sources felt more of a direct connection with the politician and expressed a higher desire to vote for him. If a participant already shared the candidate's positions politically, those feelings were enhanced following the reading of the Twitter page. The participants reading the

newspaper articles, though, seemed to have better recognition of the political issues that were presented in both formats (Lee & Shin, 2012).

The study focused on the issue of transportability, or how easily it is for the message recipient to get pulled into the narrative being presented. Twitter creates a deeper connection with the candidate, enhancing transportability. The newspaper medium did present the political issues more clearly, but for a candidate to get votes, Twitter proved to be the better medium, because the medium created a different perception from the same material (Lee & Shin, 2012).

Schultz et al put crisis communication to the medium vs. message test and came to the same conclusion as the other researchers; that the medium matters more than the message. Schultz et al looked at crisis communication from the same perspective that Coombs did, an empirical view driven by research not case study (Schultz et al, 2011).

However, they found that there was a large gap in research measuring the impact of media type on crisis response. Schultz et al designed an experiment, much like Coombs, to measure several things. First, the experiment was designed to test three different response strategies (e.g., apology, sympathy and information) through traditional and new media on both organizational reputation and secondary crisis communication (e.g., the desire to talk to friends about the crisis, share information or comment on the crisis) (Schultz et al, 2012). The study was also designed to measure behavioral intention such as an organizational boycott or attempting to convince others to boycott the organization (Schultz et al, 2011).

A fictional scenario revolving around automobile maker Mercedes-Benz and deaths due to faulty spark plugs was created and presented to participants through an online survey following photograph and case study information in a 3x3 experiment comparing medium and reaction. Consistent with Coombs' SCCT theory, the strategy of information presented did have an effect on negative reaction to the crisis. However, the Schultz study showed that the medium used to present that information had an effect on message reception (Schultz et al, 2011).

> "Surprisingly, the medium turned out to be more important than the message: Although people still talk more about newspaper articles, tweets had the most positive effect on secondary crisis communication and reactions. Also, Twitter users share information via different channels. Organizations should therefore pay more attention to Twitter, and strategically reflect on their media choice and the target groups' media use (Schultz et al, 2011, p. 26)."

Though McLuhan was watching the effects of television unfold during the 1960s, his theory that the medium was the message – or more specifically that as an extension of ourselves, the medium information is presented through would cause perceptions to change and create behavioral change in society – was never taken seriously. Now that we have many different communication channels to utilize in any given situation, research has shown that McLuhan's theory does have merit, and at the very least that the medium does have an effect on how messages are received and perceptions are created throughout society.

Morphing McLuhan to Combine with Coombs

In a keynote address at the second annual Media Ecology Association Convention in 2001, Meyrowitz closed with a section that he called "Morphing McLuhan." A McLuhan scholar and enthusiast, Meyrowitz's goal to move beyond McLuhan's thoughts included combining his work, what Meyrowitz has labeled medium theory, with other theories to help enhance our understanding of the effects of different media (Meyrowitz, 2001).

> "McLuhan's contribution has been generative, rather than substantive, inspirational rather than instructional…McLuhan's insights can be marshaled and enhanced by blending them with other theoretical approaches—including those perspectives embraced by scholars whom McLuhan considered technological idiots (such as content researchers and critical analysts of news) (Meyrowitz, 2001, p. 15)."

Coombs provided empirical evidence that selecting an appropriate response to a crisis situation will have an effect on whether the public affected by the crisis will assign crisis responsibility to the organization. Thanks to advancements in not only communication technology, but also psychoanalytical technology, we are able to better understand that the medium delivering these messages does have both a psychological effect and a behavioral effect on those receiving the message.

If what Meyrowitz discussed is correct, combining SCCT with Medium Theory will give us a better understanding of not only what messages work during a crisis, but what the most effective methods of communicating those messages will be.

As previous research has shown, there is a need to further SCCT by adding the source of the message. Combining SCCT with medium theory provides a theoretical framework to help advance SCCT by including not only the crisis response strategy, but also the medium used to send the message and how that affects an organization's reputation not only during the crisis, but during normal business time as well.

This research attempts to build upon Coombs' theory by isolating an aspect of SCCT – in this case the natural disaster crisis type in the victim cluster - and trying to determine if a change in only medium has an effect on the reputation of an organization, for the purposes of this study, electric utilities. This research attempts to understand:

RQ1: Does a different type of medium lead to a more positive organizational reputation based on communication during a crisis?

There are many different ways a utility communicates with its customers, each serving a different purpose. For the purposes of this study, medium has been simplified into two variables, push and pull. The push variable – meaning utilities can "push" information out to their customers – is represented by Facebook, a popular social media tool among electric cooperatives. The pull variable – meaning customers have to actively contact the utility to interact – is represented by an Interactive Voice Response (IVR) system, which allows utilities to record a message to respond to incoming phone calls. This study measures the effect a change in these two variables has on the organization's reputation.

The research on SCCT has shown that selecting the right crisis communication strategy will show an increase in reputation – in this study measured by the level of trust -

for an organization. Medium Theory leads us to believe that selecting the right medium for communicating a message also has an effect on the audience. It's logical, then, to assume that:

H1: Push technology is more likely to lead to a higher level of trust than pull technology when used to communicate during a disaster.

The Cooperative Difference is also thought to have an effect on the relationship between an electric utility and its members. Electric cooperative members directly benefit from being involved with the organization, serve on the Board of Directors and receive capital credits back at the end of each year. Most of the electric cooperatives in the United States are located in rural areas, so for the purposes of this research, cooperative members include rural electricity users. Non-members include those that live in urban areas. This research seeks to understand:

RQ2: Does living in a rural area lead to a more positive organizational reputation based on communication during a crisis?

With rural users likely belonging to an electric cooperative, it's likely that:

H2: Trust will be higher if an electric user lives in a rural area in the United States.

And:

H3: Trust will be higher among rural electric users if that organization is using push technology to communicate during a disaster.

Chapter 3

Methods

In order to test the hypotheses and research questions outline above, a survey-based experiment was designed to determine whether medium alone has any effect on organizational reputation. Specifically, this survey was designed to determine whether, after a natural disaster, a push medium (Facebook) or a pull medium (IVR) would have a bigger effect on the amount electricity users trust their utility. Also, this study seeks to determine whether rural electric consumers have higher levels of trust in their utility vs. urban electricity users, especially if that utility is using a pull medium.

Manipulation of Independent Variables

To examine the purpose of this research, a 2 × 2 online experimental design with between-subjects comparison was used. The experiment contains a scenario describing a weather-related outage situation at an electric utility followed by a survey related to the scenario. The independent variables were the type of medium (push vs. pull) the utility used to communicate a disaster message and the location (rural vs. urban) of the participants. For the type of medium, a push strategy indicates a medium that allows a user to send a message directly to a stakeholder, or "push" a message out to the user. A pull medium is one that the user has to take the action, or they have to be "pulled" to the message. For this study, the type of location is indicative of the type of electric user. Rural electric users tend to be members of electric cooperatives, while urban electric users are members of municipalities and IOUs.Based on the two levels of each

independent variable, the four types of situation were created for the study: 1) Push-Rural; 2) Push-Urban; 3) Pull-Rural; and 4) Pull-Urban.

For elaborating the type of medium, two scenarios were developed in this study. The scenarios commonly describe an outage scenario at a utility caused by a natural disaster. To control the severity of disaster, each scenario commonly describes that a utility had been hit by a severe storm, lost power to 60% of its membership and communicated that information to the members. The difference between the two scenarios is that the utility in Scenario 1 used Facebook to communicate this information with their members, representing a push technology, while the utility in Scenario 2 used an Interactive Voice Response (IVR) phone system to communicate with their members, representing a pull technology. The scenarios were accompanied by six statements containing between 11-22 words (see Appendix A). Following both scenarios and statements, there were seven, non-personally-identifiable demographic questions, including whether the respondent lives in a rural or urban area in the United States.

Procedures

Amazon's *Mturk* tool is an online portal that connects "requestors" – or people that have various tasks in need of completion – with "workers" – people that sign up to complete the tasks for the requestors for a small fee. Over the past several years, researchers have been utilizing *Mturk* for social science research for a variety of reasons. *Mturk* provides access to a large and diverse pool of workers from very different backgrounds. The tool is also cost-effective for researchers and allows research to be completed quickly (Mason & Suri, 2011).

Mturk provides access to workers from across the world, but for the purposes of this study, the worker population was limited to only those living in the United States. Workers were recruited through *Mturk* for the survey. The task titled "A Quick Survey on Electricity Providers and Communication" was published for *Mturk* workers to access. Once a worker agreed to participate by accepting the task in *Mturk*, they were sent via hyperlink to an online survey built through *Qualtrics*.

The first page of the *Qualtrics* survey was the consent form that stated participation was voluntary and by clicking the arrow to start the survey, they agree to participate (see Appendix B). Once the participants started the survey, they were randomly assigned one of the two groups. Each group of participants was asked to read a different type of scenario describing a utility communicating an outage scenario caused by a natural disaster. Subsequently, they were presented with six statements about what they'd just read and asked to select the most appropriate response for each statement (Likert-scale responses from *strongly agree* to *strongly disagree*). Following both scenarios, there were seven, non-personally identifiable demographic questions, multiple choice, that they were asked to complete.

Upon successful completion of the survey, workers received a code that could be entered into *Mturk* to verify they had completed the task. Each worker received 10 cents as compensation for a completed survey (all funding was provided by primary researcher for completed surveys).

Chapter 4

Results

Participants

One aspect that was of particular importance to this research project was obtaining a sample of the population that is to be studied. For this research that population is electricity users. To do this, participants were sampled using Amazon's Mechanical Turk (*Mturk*) as a place to recruit electricity users in the United States. From *Mturk*, users completed an online survey through *Qualtrics*, an online survey tool.

Upon completion of the research, 154 respondents had successfully completed the survey. Table 1 shows the demographic statistics of gender, age, location, and medium type. Within the sample, 93 respondents (60.4%) identified themselves as female and 61 respondents (39.6%) identified themselves as male.

The respondents' age ranges varied quite a bit, with the largest group, 71 respondents, falling within 22-34 years of age (46.1%). Six respondents (3.9%) were 21 or younger, 33 respondents (21.4%) were between 35-44, 28 respondents (18.2%) were between 45-54 years old, 14 respondents were between 55-64 (9.1%) and 2 respondents (1.3%) were 65 or older. On average, ages ranged between 22 and 44 years old (M = 2.86, SD = 1.126 – *Age ranges were based on 10-year categories. The mean lands between the selections 22-34 and 35-44 years of age*).

Table 1. Sample Characteristics

Variable	Count	Percentage
Gender		
Male	61	39.6%
Female	93	60.4%
Total	154	100%
Age		
21 or younger	6	3.9%
22-34	71	46.1%
35-44	33	21.4%
45-54	28	18.2%
55-64	14	9.1%
65 or older	2	1.3%
Total	154	100%
Rural Area (IV)		
Yes	70	45.5%
No	84	54.5%
Total	154	100%
Medium (IV)		
Push (Scen. 1)	74	48.1%
Pull (Scen. 2)	80	51.9%
Total	154	100%

The basis of this research relied on electricity users in the rural United States. Of the sample, 70 respondents (45.5%) live in the rural United States while 84 respondents (54.5%) do not.

When each respondent began the survey, they were randomly assigned either scenario 1, the utility using Facebook to communicate or scenario 2, the utility using IVR to communicate. Following the scenario, each respondent was directed to the same set of questions and asked to respond to what they had just read. The surveys were split fairly evenly between the respondents with 74 respondents reading scenario 1 (48.1%) and 80 respondents reading scenario 2 (51.9%).

Dependent Measures

The dependent variable in this research is the organization's reputation, measured by electricity users' level of trust in a utility based on the technology they were using to communicate. In order to measure the organizational reputation between the scenarios, one of the statements following each of the scenarios asked "I believe this is an honest, trustworthy organization." The options for responding to the statement were a five-point *Likert* scale from *strongly disagree* to *strongly agree*. The participants were asked to select the answer that best fit the statement.

Table 2. Measures of the Dependent Variable

Variable	Count	Percentage
Trust (Scenario 1)		
Strongly Agree:	7	9.5%
Agree:	36	48.6%
Neither Agree nor Disagree:	27	36.5%
Disagree:	4	5.4%
Strongly Disagree:	0	0%
Total:	74	48.1%
Trust (Scenario 2)		
Strongly Agree:	7	8.8%
Agree:	37	46.3%
Neither Agree nor Disagree:	29	36.3%
Disagree:	6	7.5%
Strongly Disagree:	1	1.3%
Total:	80	51.9%

For scenario 1, the utility that used Facebook to communicate their disaster message, 36 respondents (48.6%) agreed with the statement "I believe this is an honest, trustworthy organization," with 7 respondents (9.5%) strongly agreeing. Four respondents (5.4%) disagreed with the statement and no respondent strongly disagreed. Twenty-seven respondents (36.5%) neither agreed or disagreed with the statement (M=3.62, SD=.735).

For scenario 2, the utility that used IVR to communicate the disaster message, 37 respondents (46.3%) agreed with the statement "I believe this is an honest, trustworthy organization," with 7 respondents (8.8%) strongly agreeing. Six respondents (7.5%) disagreed with the statement while 1 respondent (1.3%) strongly disagreed. Twenty-nine respondents (36.3%) neither agreed nor disagreed with the statement (M=3.54, SD=.810).

Hypothesis Testing

Research question 1 asked: does a different type of medium lead to a different level of organizational reputation based on communication during a crisis? Hypothesis 1 stated that push technology is more likely to lead to higher organizational reputation than pull technology during a disaster. A two-way analysis of variance (ANOVA) test was conducted to test the main effect of medium on trust in an organization. The main effect for medium was found to be not significant ($F(1,150) = .441$, $p > .05$). Hypothesis 1 was not supported.

Research question 2 asked: Does living in a rural area lead to a different level of organizational reputation based on communication during a crisis? Hypothesis 2 stated that organizational reputation will be higher among rural electric users if that organization is using push technology to communicate during a disaster. The two-way ANOVA also tested the main effect for location on organizational reputation. The main effect for location was found to be not significant ($F(1,150)=2.47$, $p > .05$), therefore hypothesis 2 was not supported.

The two-way ANOVA test also tested the interaction between location and medium on organizational trust. The interaction effect was also found to be not significant ($F(1,150)=1.55$, $p > .05$) therefore hypothesis 3 was not supported.

Table 3: Two-way ANOVA Tests of Location and Medium on Organizational Reputation

	Organizational Trust				
Main and Interaction Effects	**Mean**	**SD**	***F***	***df***	***Sig.***
Medium			.44	1	.508
Push (Scenario 1)(N=74)	3.62	.735	1		
Pull (Scenario 2)(N=80)	3.54	.810			
Location			2.4	1	.118
Rural Area in U.S. (N=70)	3.69	.808	7		
Non-Rural Area in U.S. (N=84)	3.49	.736			
Interaction (Medium x Location)			1.5	1	.214
Push x Yes	3.65	.138	5		
Push x No	3.61	.117			
Pull x Yes	3.72	.123			
Pull x No	3.37	.120			

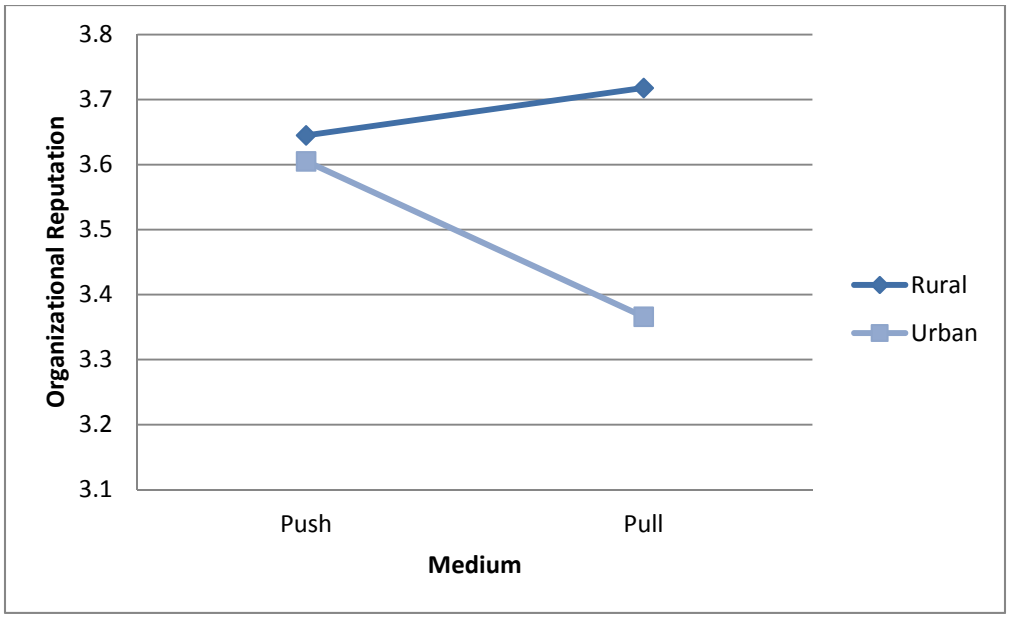

Figure 1: Interaction effect of medium and location on organizational reputation

Scenario 1: Push Technology

This research centered on the two scenarios featured in the survey. In both scenarios, a utility was facing an outage situation after a bad storm that has affected more than 60% of their membership. In scenario 1, Utility A communicated this outage via the social media site Facebook. Six statements with five-item *Likert* scale responses followed the scenario

This electric cooperative communicates effectively with their membership: The majority of respondents, 33 (44.6%), agreed with this statement regarding utility A, with 13 (17.6%) strongly agreeing with it. Eighteen (24.3%) disagreed with the statement and 2 (2.7%) strongly disagreed. Eight (10.8%) neither agreed nor disagreed ($N = 74$, $M = 3.50$, $SD = 1.13$).

This electric cooperative cares for the safety of their membership: The majority of the respondents, 42 (56.8%), agreed with this statement with 12 respondents (16.2%) strongly agreeing. Four respondents (5.4%) disagreed and 1 respondent (1.4%) strongly disagreed. Fifteen respondents (20.3%) of the respondents neither agreed nor disagreed ($N = 74$, $M = 3.81$, $SD = .822$).

In this scenario, the cooperative picked the best possible method to communicate with its membership: This response seemed to garner fairly even answers across the scale. Nineteen respondents (25.7%) both agreed and disagreed with the statement. Eight respondents (10.8%) strongly agreed and 10 respondents (13.5%) strongly disagreed. Eighteen (24.3%) respondents neither agreed nor disagreed with the statement ($N = 74$, $M = 2.95$, $SD = 1.23$).

This electric cooperative considered their message before selecting a communication method: Twenty-seven respondents (36.5%) either agreed or neither agreed nor disagreed with the statement. Nine respondents (12.2%) agreed with the statement while 8 respondents (10.8%) disagreed, 3 respondents (4.1%) strongly disagreed and 9 respondents (12.2%) strongly agreed ($N = 74$, $M = 3.42$, $SD = .979$).

If I were a member of this electric cooperative, I would support them in the event of a necessary rate increase: The majority of respondents, 26 (35.1%) disagreed with this statement, with 4 respondents (5.4%) strongly disagreeing. Twenty-three respondents (31.1%) neither agreed nor disagreed with the statement while 17 agreed (23%) and 4 (5.4%) strongly agreed ($N = 74$, $M = 2.88$, $SD = 1.01$).

Scenario 2: Pull Technology

In this scenario, Utility B was facing the same storm that knocked out power to 60 percent of its membership. Instead of using a push technology like Facebook, Utility B used an IVR system to post an automated message on their answering system to inform those that call into the utility about the outage. The same six statements with five-item *Likert* scale responses followed this scenario.

This electric cooperative communicates effectively with their membership: The majority of the respondents, 50 (62.5%) agreed with this statement while 9 respondents (11.3%) strongly agreed. Thirteen (16.3%) respondents neither agreed nor disagreed with the statement while 7 respondents (8.8%) disagreed and 1 respondent (1.3%) strongly disagreed ($N = 80$, $M = 3.74$, $SD = .823$).

This electric cooperative cares for the safety of their membership: Again, the majority of the respondents, 40 (50%) agreed with the statement while 11 respondents (13.8%) strongly agreed. Twenty-four respondents (30%) neither agreed nor disagreed with the statement while 2 respondents (2.5%) disagreed and 3 respondents (3.8%) strongly disagreed ($N = 80$, $M = 3.68$, $SD = .883$).

In this scenario, the electric cooperative picked the best possible method to communicate with its membership: Again, the majority of the respondents, 31 (38.8%) agreed with the statement while 13 respondents (16.3%) strongly agreed. Seventeen respondents (21.3%) neither agreed nor disagreed with the statement, 16 respondents (20%) disagreed and 3 respondents (3.8%) strongly disagreed with the statement ($N = 80$, $M = 3.44$, $SD = 1.10$).

This electric cooperative considered their message before selecting a communication method: The majority of the respondents, 40 (50%) agreed with the statement while 9 respondents (11.3%) strongly agreed. Twenty respondents (25%) neither agreed nor disagreed with the statement and 11 respondents (13.8%) disagreed with it. No respondents strongly disagreed with the statement ($N = 80$, $M = 3.59$, $SD = .867$).

If I were a member of this electric cooperative, I would support them in the event of a necessary rate increase: The majority of respondents, 32 (40%) neither agreed nor disagreed with the statement. Twenty-seven respondents (33.8%) disagreed with the statement while 2 respondents (2.5%) strongly disagreed. Sixteen respondents (20%) agreed with the statement while 3 respondents (3.8%) strongly agreed with it ($N = 80$, $M = 2.89$, $SD = .886$).

Chapter 5

Discussion

Significance of the Study

This study was created to understand the effect medium has on organizational reputation when an organization is communicating during a disaster. This study also wanted to test the effect of the Cooperative Difference on organizational reputation, to see if rural electric users exhibited more trust of an organization following disaster communication than non-rural electric users and also how medium affected organizational trust among rural electric users.

Situational Crisis Communication Theory (SCCT) provides organizations a means of appropriate response strategy when faced with a crisis. This is broken down by crisis type to ensure the organization selects the most appropriate message for the crisis to ensure organizational reputation is not harmed or to minimize the reputational damage. Previous research has suggested that with the technological changes in the way we communicate, especially with the immediate-reaction available through social media, that medium may need to be included in SCCT to help organizations select the most appropriate response to a crisis.

Marshall McLuhan's Medium is the Message theory suggests that medium does have an impact on the way a message is received, reinforcing the fact that medium could have an impact on crisis communication.

The findings of the current study, however, discovered that medium may not have as big of an impact on crisis communication as previous research suggests. There was no significant effect on organizational reputation when the medium used to communicate during a disaster was changed. It was hypothesized that the organization using Facebook would receive a higher reputational boost than the organization using the IVR, but this was not the case in the current study. The numbers were almost identical between the two scenarios of those respondents that either agreed or strongly agreed that the organization was honest and trustworthy. There were slightly more that disagreed or strongly disagreed with the IVR sample, but there was also a slightly bigger sample size that were presented with that scenario (N=80 for IVR; N=74 for Facebook).

While there was no significant effect, the data showed that regardless of the medium used to communicate the disaster message, the majority of the respondents agreed or strongly agreed that both utilities were honest and trustworthy and that both organizations communicate effectively. However, when asked whether the organizations picked the best method to communicate, the majority of respondents in the IVR scenario agreed or strongly agreed (55%), while more respondents disagreed or strongly disagreed (39.2%) with the Facebook scenario.

The study also asked about communication effectiveness between the two scenarios. More respondents (74%) agreed or strongly agreed that the organization in the IVR scenario communicated effectively than the organization in the Facebook scenario (62%).

One other aspect of SCCT that is important is how crisis communication affects organization reputation during normal business time. The study asked respondents whether they would support the organizations in the case of a necessary rate increase. Regardless of the medium used to communicate during a disaster, respondents strongly indicated they would not support a rate increase, showing that the medium used to communicate during a disaster does not have an effect on normal business initiatives.

With the majority of electric users in rural areas belonging to an electric cooperative, it was hypothesized (Hypothesis 2) that due to a stronger connection with the electric provider, respondents living in a rural area would be more trusting of the organization, regardless of the communication type. However, the study showed that location, rural or urban, does not have a significant effect on organizational reputation, regardless of the medium used to communicate during a disaster. Hypothesis 3 stated that the organization using Facebook would see increased organizational reputation, but the study showed no significant effect in the interaction between medium and location on organizational reputation.

This study does have implications in crisis communication research. The current study wanted to understand if medium has a place in SCCT. Based on the results of the current study, it shows that medium does not have an effect on organizational reputation, which means that medium may not need to be considered with SCCT when an organization is deciding how to respond to a crisis.

This is inconsistent with findings in previous research, especially research focused on social media and SCCT. Liu et al proposed the Social-Mediated Crisis

Communication Model to deal with crises specifically through social media. The results of the current study show that the use of social media, in this case Facebook, to communicate crisis information did not have a significant main effect on organizational reputation and therefore may not necessarily have an impact on SCCT.

Limitations and Suggestions for Future Study

This study focused on an extremely narrow aspect of SCCT, the natural disaster crisis type. SCCT is a very complex system to help organizations understand the best message to select when responding to a crisis. There are many layers of SCCT that were not explored in this study. Future research on medium and SCCT should focus on the other crisis types in SCCT to see if there is a significant effect on organizational reputation.

This study also selected two very specific mediums for testing the effect of organizational reputation, Facebook vs. IVR. There are many different types of social media and other types of traditional, or pull communication that could be used to test the effect of medium on organizational reputation. For instance, Twitter may have a different outcome than Facebook when it comes to communicating disaster information. For many users, Facebook is something they use every day, and a high level of involvement may mean they prefer some other medium to receive specific information, such as that of a disaster. Another medium that has been traditionally used to communicate outage and weather information is the traditional media, especially radio. Users could prefer this medium due to a tradition of reliance on it for weather-related crisis information. Future

studies should explore the other types of media used to communicate crisis information to see if there is a significant effect on organizational reputation.

This study also used a very specific organization type to test the effect of a natural disaster scenario, the electric utility. There are many other organizations, such as police and fire organizations, that are first-responders when disaster strikes. Future research should test other organizations to see if medium has a significant effect on organizational reputation when communicating during a disaster.

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Appendix A – Scenarios

As part of a research project for the University of Missouri, this survey hopes to collect and analyze information regarding communication, and communication methods, during a storm or natural disaster. In this survey, you will be presented with two brief scenarios regarding two electric utilities. Please read these scenarios carefully. Following each scenario, you'll find several statements about the situation. Please select the response that most closely matches how you feel that statement applies to the scenario you just read. This survey will take no more than 10 min. to complete. Thank you for your time and your participation.

Scenario 1 – Push technology

Utility A is located in the Midwestern United States, providing electricity services to 15,000 people in their service territory. Severe weather has just hit their service territory causing massive power outages across the area, affecting more than 60% of their members. In order to communicate this with their membership, Utility A posts Facebook messages throughout the storm containing details of how many customers are still without power, in what areas their crews are working and when customers can expect their power to be restored. They also share photographs and any emergency information that customers may need to be aware of such as they location of downed power lines.

Scenario 2 – Pull Technology

Utility B is located in the Midwestern United States, providing electricity services to 15,000 people in their service territory. Severe weather has just hit their service territory causing massive power outages across the area, affecting more than 60% of their members. In order to communicate this with their membership, Utility B posts an automated voice response message on their answering system that explains to members that call the main office which areas are out of power and that crews are working hard to restore power as soon as possible and updates the message to remove areas that are currently experiencing outages as they are restored.

Appendix B – Survey Questions

Statements following each scenario

1. This electric cooperative communicates effectively with their membership.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree
2. This electric cooperative cares for the safety of their membership.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree
3. The communication method used in this scenario was the most effective for the situation.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree
4. I believe this is an honest, trustworthy organization.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree
5. This electric cooperative considered their message before selecting a communication method.
    a. Strongly Agree

b. Agree
c. Neither Agree nor Disagree
d. Disagree
e. Strongly Disagree

6. If I were a member of this electric cooperative, I would support them in the event of a necessary rate increase.
    a. Strongly Agree
    b. Agree
    c. Neither Agree nor Disagree
    d. Disagree
    e. Strongly Disagree

Appendix C – Consent Form (Page 1 of Survey)

As a Member of an electric cooperative, or someone that uses electricity in rural America, you are being invited to participate in a research study on electric cooperatives and their use of various communication tools in crisis situations, such as storms. This study is part of a graduate thesis research project at the University of Missouri.

There are no risks to you for participating in the study, and you'll receive $0.10. This survey should take no more than 5 min. to complete. The information you provide will contribute to research regarding the most effective and efficient way to communicate with electric utility customers regarding storms and other crisis scenarios. What is learned from this study could potentially help electric co-ops be more prepared to communicate with utility customers before, during and after a storm or crisis.

This survey information is anonymous. No one will be able to identify you, know any personal information about you, or even whether or not you participated in this study.

Your participation in this study is voluntary. If you choose to participate, please get started below.

Thank you for your time.

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