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The Use of Social Media for Disaster Information in Houston- Galveston, TX

Erik Phillip Zugner
Walden University

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Walden University

College of Health Sciences and Public Policy

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Erik Zugner

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Walden University
2022

Abstract

The Use of Social Media for Disaster Information in Houston-Galveston, TX

by

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MA, Bellevue University, 2008

BS, University of Houston-Downtown, 2003

AS, San Jacinto Community College, 1999

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

May 2022

Abstract

Disasters, natural or human-caused, have the ability to inflict catastrophic economic and physical damage to communities around the world. As social media is becoming more widespread in the use of information sharing, it is not being used to its full potential to communicate with the communities in the greater Houston-Galveston, TX region. The purpose of this study was to address the use and implementation of social media for disasters and large-scale events in the Houston-Galveston, TX region. I used the transformative framework as outlined by Creswell as the theoretical framework for this study. The qualitative research questions focused on social media platform(s), messaging, and collaboration efforts as it pertains to disasters and planned events. There were eight participants that ranged in age and geographic area in the greater Houston-Galveston, TX region. This study provided social change in that emergency managers have a better understanding of what the community is seeking in times of disaster incidents near their family, community, and places of employment. The data were analyzed into patterns and themes as to which social media platform(s) and what information has been collaborated with all involved parties to save lives and property prior to and during disaster incidents and large-scale events. The results indicated that participants sought vital lifesaving information, Facebook and Instagram platforms recognized as the preferred platforms, and that collaboration is wanted between the community and government leaders. The implications for positive social change are collaborative communication efforts using social media with government leaders, emergency management officials, and the community to save lives and property in the greater Houston-Galveston, TX region.

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Dedication

This study is dedicated to the first responders who tirelessly work prior to, during, and post disasters every day. This study is also dedicated to my wife, Amy, who continued to encourage me to complete this dissertation when I was ready to give up throughout this process. I dedicate this to my three kids; Jordyn, Caleb, and Wyatt, to show them that you can do anything as long as you put your mind to it.

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Chapter 1: Introduction to the Study

Introduction

Disasters of all types have the ability to affect the greater Houston-Galveston, TX region. Disasters can be human caused from intentional acts such as terrorist attacks, natural disasters as in hurricanes/flooding, or accidental in nature, including individual error at a petrochemical facility, and those have the ability to impact the physical infrastructure and the economy of the community. My goal in this study was to assist emergency managers in the use of social media as an avenue for information dissemination during disaster events and the collaboration of information between emergency management officials and the community. I determined effective social media platforms to use in terms of information dissemination during disaster incident management in the greater Houston-Galveston, TX region. Houston et al. (2014) concluded that it is unclear how social media is being utilized in disaster planning. Therefore, I aimed to identify how emergency managers in the greater Houston-Galveston, TX region can better use social media platforms in disaster incidents and event planning to provide the community with critical disaster and event related information.

As disasters continue to disrupt the daily functions of a community, social media is becoming a more widely used information sharing platform for emergency management officials and the community to save lives and property (Huder, 2012; Phillips, 2016). When a disaster impacts the greater Houston-Galveston, TX region, government officials and emergency management officials will inform the community of

the type and scope of the disaster incident. The information can be used by those affected to determine what actions to take in order to save lives, save property, and reduce the impact of infrastructure and the economy. The information disseminated on social media is part of a two-way information sharing between the community to the government officials during disasters (Keese Smith, personal communication, January 10, 2019). Because social media is becoming more widely used for disaster information sharing, I determined which social media platforms are most effective during disaster incidents.

There is vital information that is needed during a disaster and the use of social media platform(s) are increasing with each disaster. Social media has been able to bring communities closer and individuals closer to their government and emergency management officials (Arellano, 2013). I sought to determine which social media platform(s) the community used to gain and share information with emergency managers. Social media has the ability to share up-to-date information by both parties during disasters in the greater Houston-Galveston, TX region.

With social media becoming widely used by government agencies, emergency management, and the community as an intermediary, social media can be used to better collaborate information during disasters. Social media has the ability to extend government services and have citizen participation to collaborate information between the government officials and the community (Khan et al., 2014). In this study, I focused on the collaboration of information between the community and emergency managers prior to the impact of a disaster, during the response, and through the recovery phases of

a disaster and event planning. The information from this study may be used to save lives and preserve the property of citizens and stake-holders, as there are numerous potential disasters within the greater Houston-Galveston, TX region on a daily basis.

In Chapter 1, I first present the background of this study along with the problem statement, the purpose of the study, the research questions, and the theoretical framework. Then, I describe the nature of the study, the definitions of terms commonly used in emergency management, the assumptions of social media as it pertains to disaster incidents, the scope of delimitations, and the limitations of this research. Last, I discuss the significance of this study, and conclude with a summary.

Background

The Houston-Galveston, TX region has experienced numerous disasters that have affected the region in various manners, such as weather-related incidents, petrochemical industrial incidents, acts of terrorism, and large-scale planned events. The most recent weather-related incident was Hurricane Harvey (2017) that caused wide spread flooding across the region, damaging homes and creating road closures for many weeks. As Houston-Galveston, TX is the largest petrochemical port in the United States and second in the world with numerous facilities that line the Port of Houston, there is the potential for hazardous materials to be released into the atmosphere or spilled during transporting to and from the facility that has the potential to injure or kill community members (Santosh, 2017). Furthermore, Houston, TX is a known target for terrorists with a large airport named after a former president and the host of numerous large-scale planned events such as the Super Bowl and the World Petroleum Conference, to name a few

(Mathew Slinkard, personal communication, January 10, 2019). These incidents effect the community with road closures, widespread flooding, mandatory and voluntary evacuations, and shelter in place orders; this information can be broadcasted through social media.

This information is disseminated throughout the greater Houston-Galveston, TX region in a variety of ways, with social media being one. Houston et al. (2014) identified a gap regarding miscommunication between local government officials and the information emergency managers are providing to the community about a potential disaster with the use of social media. In this study, I filled that gap, through face-to-face interviews with community members to assist emergency managers of the type of information to disseminate for future disasters and planned events.

In this study, I filled the gap between emergency managers and the community as it pertains to information sharing during all phases of the disaster management cycle through social media. I found that social media may help government leaders and emergency management officials to determine the best collaborative information sharing efforts prior to and during a disaster or large event. Furthermore, the findings from this study may be used to determine the most effective evacuations and other disaster related information for the community and stakeholders. Social media increases civic participation during a disaster to aid government and emergency management officials in problem solving and improve their decisions (Khan et al., 2014). When disasters affect a community, there is a need for information. Social media is a new technology where governments and the media are bridged to provide information to the community and

stakeholders (Phillips, 2016). Social media is being more widely used by government agencies and citizens to share information with one another rather than traditional media as an intermediary source of information as previously used.

Social media is becoming more extensively used by government agencies, stakeholders, and the citizens rather than obtaining disaster information from traditional media sources (Feldman et al., 2015). Houston et al. (2014) found that social media has advantages over traditional media in terms of information, adaptability, financial impact, and with timeliness. Furthermore, social media platforms such as Twitter and Facebook have proven valuable to citizens, emergency managers, and stakeholders through sharing of information about a disaster incident's situational awareness (Haddow et al., 2014). This study was essential as disasters do not have community or individual boundaries. When used properly, social media platform(s) have the ability to spread information quickly in an effort to reduce the loss of life and property prior to a disaster or planned event (Phillips, 2016).

The planning and the use of social media is expanding the role of emergency managers by providing the public information in real time to the emergency managers. Emergency managers' focus on the risks to the community and share information as it relates to disasters and large events. The most important factor is that the recipients of social media messages should have trust in the emergency managers who are in command of communicating information to the public in a manner that they will understand (Rod et al., 2012). Through the use and expansion of social media, the information needed for the public can be disseminated to reach a greater number. The

community also has the ability to provide valuable information to the emergency managers about their communities. As the use of social media is expanding with every disaster incident, its use is becoming more common for disseminating information to the communities by officials (Luna & Pennock, 2018; Steelman et al., 2014).

It is essential for emergency management officials to view social media as a benefit in the dissemination of information prior to a disaster, rather than an afterthought (Takahashi, 2015). As Arellano (2013) found, social media has brought communities closer together because people check in on one another's safety and share information when a disaster incident takes place. Use of social media necessitates a larger role with emergency managers to provide up-to-date information and correct any misinformation previously shared by users (Houston et al., 2014; Luna & Pennock, 2018; Takahashi, 2015). Due to the recent popularity of social media and its distinctive characteristics, social media has evolved in becoming a central source of information sharing for emergency management officials and community members. The participation increase among the community and stakeholders impacts the decision making of the emergency managers in building better community relations (Anson et al., 2016; Khan et al., 2014). The greater Houston-Galveston, TX region has experienced disasters of varying calibers with the potential of a disaster at any moment. Through the use of social media, government officials, emergency managers, and the community can collaborate information in order to save lives and protect property.

Problem Statement

There has been minimal research into how social media can provide adequate information collaboration between the communities, government officials, and emergency managers prior to an anticipated disaster or large-scale planned event. This illustrates a need for this study to ensure that government officials and emergency managers have a better understanding of the use and ability of social media during disasters (Liu et al., 2015). As social media becomes more widely used by government agencies, including emergency management officials, there is a need to develop policies and procedures that outline what information to disseminate in a timely manner. Houston et al. (2014) identified that it is currently unclear how government agencies, including emergency managers, use social media for disaster planning and communication with the citizens. In this study, I identified how managers in the greater Houston-Galveston, TX region can better use social media in disasters and large-scale event planning. Social media is becoming more widespread among government agencies in the Houston-Galveston, TX region as a way of providing information to communities and stakeholders for disaster incidents (Sgt. Avant, personal communication, July 18, 2016). However, the manner in which agencies are using social media is not providing accurate and adequate information to the affected communities (Michael Walter, personal communication, July 18, 2016). The use of social media may be a great benefit to the Houston-Galveston, TX region in providing disaster information before, during, and following an incident.

There was a need for this study because current methods of information dissemination are limited in their impact as individuals move to reduced television

viewing and radio listening, and instead are obtaining information through various social media platforms. Traditional communication methods, such as television and radio, may have interrupted services during a disaster depending upon the severity and type of disaster. With social media, the potential to provide disaster communication of information can be accomplished through cellular devices as an effective communication tool (Houston et al., 2014). Social media is gaining popularity as a means for intermediary exchanges of information between different government agencies, the citizens, and the stakeholders to communicate with one another (Khan, et al., 2014). Currently, when a disaster incident affects a community, initial information may be unclear to those impacted and the damage caused by the disaster. Social media is developing as an untapped potential for two-way information sharing as it pertains to a natural and/or human-caused disaster incidents within the greater Houston-Galveston, TX region. Through social media, emergency management officials can provide more accurate information quickly to a larger number of individuals (Steelman et al., 2014).

Purpose of the Study

The purpose of this qualitative study was to address the use and implementation of social media as a source of providing and receiving accurate and detailed information to community members by government and emergency management officials in planning for, during, and following disaster incidents in the greater Houston-Galveston, TX region. The use of social media by emergency management officials is a relatively new manner for information dissemination. Social media may be used for advanced disaster

communication to communities for natural and human-caused disasters (Houston et al., 2014).

As there is limited research in how social media is used in all-hazards disaster planning, I filled the identified gap and determined how communication and which social media platform(s) are perceived to be used during disaster incidents and large-scale events in the greater Houston-Galveston, TX region. There was a need for this study as a government spokesperson mentioned that the current methods of information dissemination are reactive in nature, which has the potential to place communities in harm's way by not providing adequate information prior to a disaster incident. When information is provided in a more proactive manner, the community has sufficient time to save lives, property, and evacuate any potential effected areas. The region is vast geographically and traditional media are not adequate for how large the region is with the threat of numerous disasters that may affect the region. This study can be used by government officials, emergency managers, and the community to work collectively for information dissemination as it pertains to disasters and large-scale events to save lives and property in the greater Houston-Galveston, TX region.

Research Questions

Research Question 1 (RQ1): What information from government agencies and emergency management officials do community members and stake-holders perceive to be the most critical to receive via social media prior to and during a disaster incident or large-scale event?

Research Question 2 (RQ2): Which social media platform(s) would citizens be more willing to follow from emergency management officials during a disaster incident?

Research Question 3 (RQ3): How does the community perceive that government agencies and emergency management official can better collaborate with them?

Theoretical Framework

I used the transformative framework as the theoretical framework for this study. The Transformative framework states that knowledge is biased and has an emphasis on relationships within society (Creswell, 2013). I used this framework with the goal of building relationships between the community, stakeholders, government officials, and emergency managers in an effort to collectively improve disaster planning, response, and recovery messages through the use of social media in the greater Houston-Galveston, TX region (Creswell, 2013). The transformative framework can be used to change the lives of those participating in this study, and other community members. It can also be used to update the social media policies and messages by government officials and emergency managers during future disasters and planned events.

The study participants discussed social media use as it relates to disaster emergencies and large, planned events (Creswell, 2013). The transformative framework was in alignment with qualitative research methods. I examined how study participants' use of social media as an information dissemination (Creswell, 2013). The transformative framework is an action-oriented research framework, as such, emergency managers may be able to use information from the participants of this study to inform their use of social media during an emergency incident or event (Creswell, 2009).

Nature of the Study

I conducted a qualitative phenomenological study. Creswell (2013) argued that phenomenological studies are those in which the author investigates the lived experiences of a sample population who all went through the same experience. I recruited eight participants from the population of residents in the Houston-Galveston, TX region who experienced previous large-scale disasters and planned events. I used purposeful and convenience sampling to gather participants who were residents in the region in September 2008 for Hurricane Ike and, most recently, for Hurricane Harvey in 2017. The sample population ranged in age from 18 to 80 years old, and had various genders and ethnicities, to ensure a sample size representing the whole community.

I collected the data through face-to-face interviews conducted with the selected participants. The participants in the phenomenological study provided real life experiences from the different disasters that have impacted their communities following Hurricane Ike to the present time. I examined the best use of social media and how it can be used by the community in obtaining and sharing information with the government and emergency management officials. I also explored new methods of collaboration by providing messages from emergency management officials to the community and community with emergency managers (Creswell, 2013.) I categorized the responses from the participants from the most repeated type of information the community was seeking (i.e., evacuations routes or road closures), the social media platform(s) most discussed, and concluded with collaborative efforts by participants responses. Each research question has its own category in Chapter 5 of this research. Once I completed

the assessment of the findings, I made them available to government officials and emergency managers in the greater Houston-Galveston, TX region to share within their respective personnel. Regional government agencies may use the results from this study to develop and update disaster incident and large-scale planned event social media policies and procedures in how to better collaborate between agencies and communities on the message disseminated and the social media platform used.

Definitions

Emergency: Any incident, whether natural, technological, or human-caused, that requires responsive action to protect life or property. Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, an emergency means any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States (FEMA, n.d.).

Emergency Manager: This position is responsible for the everyday emergency management programs and activities. The individual will coordinate all facets of the jurisdiction's emergency management and incident/event capabilities (FEMA, 2008).

Emergency Operations Center: central management facility to carry out planning and strategic functions on an event or incident (Sylves, 2015).

Event: A pre-planned non-emergency activity such as sporting event, concert, or parades (FEMA, 2019).

Geo-Fencing: an invisible electronic boundary that is location-based using a set of parameters for mobile technology based programs such as software or an app (White, 2017).

Hazardous Materials: Substances that have the ability to pose a threat to the community or the environment if released or spilled (Haddow et al. 2014).

Incident: Is an occurrence that is either natural or man-made that requires action by emergency and/or public safety entities to minimize the loss of life and property (FEMA, 2008).

Threat: The warning of a possible hazard (Huder, 2012).

Vulnerability: The valuation of an agency's preparedness level to determine the abilities and resources that are available or required when a disaster incident takes place (Haddow et al., 2014).

Whole Community: The approach that incorporates all aspects of the community for emergency management (Phillips, 2016).

Assumptions

The assumptions of a qualitative research study are things that are presumed to be true by those reading the study (Stating the obvious, 2022). I made several assumptions when conducting this study. I assumed that the public should have an impact on the communication regarding a disaster or an event in their community. I assumed social media messages were used in planning for disaster incidents and large-scale events in the greater Houston-Galveston, TX region. Additionally, I assumed that participants in this study used social media as a source of information collection and sharing. I also assumed

that participants in the study would respond truthfully. I assumed that social media was used a lot more when planning for disasters and large-scale events in the greater Houston-Galveston, TX region prior to this study. I was able to mitigate these assumptions through interviewing participants with open-ended questions.

Scope and Delimitations

In this study, I discovered that there is a lack of information from government agencies and emergency managers regarding what information the community would need during disaster incidents through social media messaging in the greater Houston-Galveston, TX region. As Houston et al. (2014) mentioned, there is minimal research into the use of and collaboration with social media for providing adequate information to communities and stakeholders in disaster-prone areas. Liu et al., (2015) recommended information for dissemination on social media platform(s) to the community and the required community input for better assistance.

There is an increase of individuals using various social media platforms as their primary source for information gathering, and sharing about their surroundings rather than seeking out traditional media sources, i.e., television or radio (Rod et al., 2012). One specific focus of my study was to prevent community members in the greater Houston-Galveston, TX region from preemptive evacuations, such as those that occurred during Hurricane Rita, 2005, and Hurricane Ike, 2008, which led to congestion on freeways out of Houston and Galveston, TX. Through this study, I also helped emergency managers in their use of social media for enhanced communications with and in collaboration with the affected communities Through my study, I can help government

officials and emergency managers gain insight into what adequate information to provide as a disaster advances toward a community, develop or changes, and any public service updates in order for community members and stakeholders to make decisions on evacuations, sheltering in place, or other guidance by officials.

The goal of my study was to gain awareness from community members within the greater Houston-Galveston, TX region regarding what information they sought from emergency managers. With this study, I had the ability to help prevent misinformation pending a disaster such as Hurricane Katrina in August 2005. The diversity of the City of New Orleans is similar to Houston, TX and Galveston, TX, with comparable hazards that surround and have the potential effect on the communities. Governmental officials can bridge relationships with the community using the information from my study as it relates to sharing information about a disaster within the numerous communities in the region. The new technology of social media as a disaster-response tool remains difficult to implement within agencies (Feldman et al., 2015), and with this study I helped government officials and emergency managers to develop disaster information sharing policies to inform the community. Furthermore, my study focused on English-speaking members, within the greater Houston-Galveston, TX region, who have experienced recent disasters and were residents in the region during Hurricane Ike (2008) and Hurricane Harvey (2017) disasters.

The potential for transferability was high for this study as information can be unclear prior to and at the onset of a disaster. The information from my study might assist other government agencies and emergency managers in the development of an

effective use of social media policy where emergency managers and the community request information. The data gathered from my study has the ability to bridge communities, stake-holders, government officials, and emergency managers through collaboration in the use of social media for disasters.

Limitations

There were various limitations within this study on the use of social media as it pertains to disaster incidents and large-scale events in the greater Houston-Galveston, TX region. First, the media preference of the demographics in this region varies by age and language spoken. While older age groups are accustomed to traditional media, younger age groups obtain their information more often from various social media platforms (Rod et al., 2012). The older age groups have the potential to miss out on the immediate nature of information via social media as they wait for the traditional media broadcast times to obtain information regarding a local pending disasters or planned event. According to Rod et al. (2012) individual differences and community demographics exist during emergencies. This study was conducted only in the English language which limits proper representation of the cultural diversity of the region.

A second limitation was the numerous social media platforms that have been used by all age groups which limits the effectiveness of emergency managers getting important and accurate information to the community (Khan et al., 2014). This study sought out the social media platforms that the community turns to for a constant collaborative information sharing effect. The data identified the social media platforms that

government officials and community members might use to work together in providing one another with information to ensure public safety.

Lastly, the agency and community relationships need to be as such that when information and instructions are disseminated, that there is uniformity in adhering to the provided messages. The relationship between community and government agencies will need to have trust with one another to ensure all instructions and guidance is followed in an effort for everyone to remain safe (United States Office of Government Ethics, 2000) when disaster strikes or there is a large-scale event in the region. Through the use of social media the government and citizen relationship can flourish with everyone being out of harm's way and safe.

One measure that addressed these limitations was working with traditional media outlets and encourage their viewers to use the more popular social media platforms. Having emergency managers and traditional media working in cooperation to share information in multiple languages, with visuals of what the social media platform is and the message, will address the age group gap limitations (Felsman et al., 2015; Noji, 2011). A second measure that addressed the limitations was the broadcasting of information on the internet news sites, television, radio, and the more common social media platforms (Takahashi, 2015). Displaying the most common social media emblems on traditional media outlets advised the community as to which social media platform to focus for accurate information when there is a disaster incident in the greater Houston-Galveston, TX region. By showing the most common social media emblems in conjunction with traditional media, this narrowed the number of social media platforms

the community will use for combined information sharing (Dr. Laura Myers, personal communication, April 19, 2017). Associated with social media limitations listed there were biases.

With research there are biases and prejudices that must be overcome. One bias of using social media as an information sharing tool during a disaster is that the messages will only be in the English language. According to a government official, the greater Houston-Galveston, TX region is widely and culturally diverse. Emergency management and government officials will need to have messages for the variety of languages that are commonly found in the region. Another bias was that the information will not be useful in all areas of the region due to its immense geographic size. This bias was addressed in interviews as emergency managers have the ability to geo-fence a location and provide information via social media to that designated area. There were biases within the study that were overcome in an effort to advance the study of social media as an information collaboration tool for disasters.

Significance

This study filled the identified gap by providing information to government agencies and emergency management officials as to the use of social media as opposed to traditional media sources when disasters and large events impact the greater Houston-Galveston, TX region. This project was unique in that there is significant research on social media and communication but there is an identified gap of the understanding of social media as it pertains to disaster information sharing between governmental agencies and communities in the region. Typically, information has been a one-way avenue

during disasters through traditional media outlets. However, with the introduction and rapid use of social media, information can become a collaborative effort between government agencies, the community, and stakeholders. The use of social media as an information sharing platform has expanded to government agencies within the past few years (Houston, et al., 2014). This study further examined the policies, procedures, and what information the community is seeking from the government agencies as it pertains to social media. This data gathered in this study supports Houston et al. (2014) in that social media communication can provide information from government agencies to citizens and vice versa in an effort to save lives and property prior to and during a disaster incident, and information during large-scale planned events.

Social media has the ability to advance disaster communication (Arellano, 2013). The data gathered in this study assisted emergency managers in the use of social media as a communication bridge to their communities. Brian Norcross (personal communication, April 17, 2017) stated that government agencies are not using social media to provide adequate and accurate information to disaster affected communities. This study provided guidance for governments and emergency managers regarding what information the community is needing and how social media can be a two-way information sharing tool for all parties within the community.

As social media is expanding into the mindset of how individuals think, their actions, and communication regarding disasters (Arellano, 2013), this study showed the importance of using social media at the forefront of disasters in a culturally diverse region that has numerous potential for disasters on a daily basis. This study can bring the

community, stakeholders, and emergency managers together in providing information to share with one another in an effort to work collectively in times of disasters.

Summary

This study was conducted through the interviewing of citizens and stake holders in the greater Houston-Galveston, TX region to discover what information is sought from government officials and emergency managers on social media as it relates to disasters in the region. As disasters have the potential to inflict large economic and physical damage, this study researched how damage could be minimized and more timely and accurate information shared through social media in collaboration with government officials, emergency managers, and the community. According to a government official, social media has the capability to provide timely and accurate information where society does not have to fear the media, but are able to work in tandem. This study identified the use of social media as a catalyst for information gathering and sharing in the planning for disasters and related large-scale events. The results from this study were provided to emergency managers in the greater Houston-Galveston, TX region in an effort to amend or develop their social media policies for information sharing and gathering during a disaster incident. The main focus of the research was to prevent the loss of life and property by the sharing of information between the community members and emergency managers using social media.

Chapter 2 will further review previous research on the use of social media and the impacts that social media has as a communication tool and process during disaster incidents. Social media has been previously studied as a communication avenue for

citizens, stake holders, and emergency management officials. A gap remains in the research literature as to what information the community and stake holders are seeking from emergency managers.

Chapter 2: Literature Review

Introduction

The greater Houston-Galveston, TX region is prone to multiple types of disasters at any given time throughout the year. Disasters can be either human caused, intentional acts such as terrorist attacks, or natural events such as hurricanes/flooding or wildland fires. Additionally, disaster incidents may be accidental where individual errors negatively impact the infrastructure and the economy of the area of study. The results of this study may be used by government leaders and emergency managers to improve the use of social media for information dissemination to the community. Through this study, I sought out from the community as to which social media platform(s) to use, and their best use in terms of information dissemination. Houston et al. (2014) mentioned that it is uncertain how social media is being utilized in planning for disaster incidents and events. With this study, I aimed to identify better use of social media platforms when disaster incidents take place and large-scale event planning in an effort to provide the greater Houston-Galveston, TX region community with information.

With the continuation of disasters that interrupt communities around the world, social media is becoming a tool that is more widely used for information sharing by government leaders and emergency management officials to save lives and property (Huder, 2012; Phillips, 2016). Social media has the capability to disseminate information and is an avenue for two-way information sharing with the community to the government officials when there is a disaster (Keese Smith, personal communication, January 10, 2019). The data gathered in this study helped me determine how leaders and emergency

management officials can better use social media platforms in a more effective manner during disaster incidents.

There has been minimal research into how the use of social media can provide adequate information collaboration between communities, government officials, and emergency managers prior to an anticipated disaster through the response and recovery phases of the disaster incident. There is a need for this study to ensure that government officials and emergency managers have a better understanding of the use and ability of social media during disasters. As social media has become more widely used by government agencies, including emergency management officials, there is a need to develop policies and procedures that outline which social media platforms should be used to disseminate information in a timely manner. There is a need for this study because current methods of information dissemination are limited in their impact as individuals move to reduced television viewing, radio listening, and instead are obtaining information through various social media platforms. With social media, the potential to provide disaster communication information can be accomplished through cellular devices as an effective communication tool (Houston et al., 2014). Social media is developing as an untapped potential for two-way information sharing as it pertains to a natural and human caused disaster incidents within the greater Houston-Galveston, TX region.

As social media becomes more widely used in everyday life here are several articles about social media and its readiness for information dissemination and two-way collaborative efforts with emergency management. Many researchers (e.g., Arellano,

2013; Khan et al., 2014; Keim & Noji, 2011) have detailed the importance of communication and how social media can be used cooperatively with traditional media sources. The current literature available addresses the history of social media, benefits of social media use, and the limited use as a disaster warning system (Jacobs, 2016). The literature available for this study is relevant as social media becomes more widely used for disaster preparedness, response, and recovery efforts.

After the introduction, the literature search strategy details what databases were used, and how they were used. Then the theoretical foundation discusses transformative framework and its application to this study. The chapter continues with the conceptual framework to detail the concept of phenomenological research for this study. The chapter concludes with the literature review that went into great detail of the chosen methodology, strengths and weaknesses of social media, what remains to be studied, why the approach was used for this study, and a summary of themes and the gap within this study.

Literature Search Strategy

The literature search strategy I used for this study included accessing the Walden University Library online databases and conducting in-depth searches on communication, social media, and collaboration. I conducted a search of peer-reviewed articles, scholarly publications, and books on communication, disasters, emergency management, and social media. In the beginning of the study, my focus was only on social media. As the search strategy continued and progressed, the focus expanded to overall communication and information sharing as it aligned with the theoretical framework of this study. My

research continued with online research databases of ProQuest Central and Google Scholar. Additionally, I searched for articles pertaining to social media and disasters. I also reviewed the Federal Emergency Management Agency (FEMA) website and publications for information sharing and social media. Additionally, I examined multiple social media policies from local government agencies, as the study area is large and disasters effect those agencies collectively and respond together.

Throughout this study, I used numerous key search terms when searching for scholarly articles. I used the following terms to guide the literature search: *communication, social media, traditional communication, media, news media, media messaging, social media and community collaboration, social media and disasters, and disaster communication*. Previous researchers referenced the aforementioned terms in the articles for this study. The terms were searched frequently to seek out any new social media related terminology that was discovered. There were no additional articles found for this study.

An outline of social media and traditional media messaging was developed through research and discussion with other qualitative researchers. I discovered numerous articles on social media and social media messaging. I also found multiple articles regarding the use of social media during disasters and community collaboration with local governments. Using two-way communication within social media as it relates to disaster communication was the final topic of search. Communication was the main topic for a majority of the articles as the communication was up-to-date and could change as the disaster changes. Articles about communication focused on how communication has

evolved with social media and the benefits, as well as, how to control any false messaging that may be broadcasted. I sought after topics related to large-scale event messaging. The articles I discovered and used revolve around social media, messaging, and disaster or events to support the transformative framework of this study.

Theoretical Framework

The transformative framework is what I used in this study. The transformative framework states that knowledge is biased and has an emphasis on relationships within society. The use of this framework will help foster relationships between the community, stakeholders, government officials, and emergency managers in an effort to change the lives in a positive manner as it relates to disaster planning, response, and recovery through social media (Creswell, 2013). The transformative framework will allow the community and stakeholders to have the ability to have a positive impact on furthering information sharing in which social media platform(s) are to be used by government officials and emergency managers as they relate to disasters, human caused or natural, and large-scale planned events (Mertens, 2017).

According to Creswell (2013), the transformative framework was initially created in 1987 by researcher Fay. Researchers Greene and Caracelli (1997) identified transformative research as a research design where the research provided value-based research. Furthermore, Greene and Caracelli (1997) stated that the transformative framework is a research design that empowers participants and places a focus on action solutions. From its development, numerous researchers have used the transformative framework in their research (Sweetman et al., 2010). Although the research framework is

relatively new, the transformative framework can have a large impact in social change in a positive manner with all societal levels (Mertens, 2017).

The transformative framework has been used in multiple research projects that focus on an action solution for positive social change (e.g., Sweetman et al., 2010). In previous research, the use of the transformative framework has been used by researchers with issues of concern (Sweetman et al., 2010). Researchers have used the transformative framework to seek ideas and solutions that can change the way businesses conduct work. This is done through the influence of employees, and the customer interest to improve society and to support any positive changes (Mertens, 2017; Sweetman et al., 2010). This framework has been applied to previous research about communication between traditional and social media platforms. Feldman et al. (2015) used the transformative research framework to investigate modern technology options for disaster resilience. Participants in that research provided guidance in the shift from traditional radio communication to the use of social media. Additionally, research has been conducted on what sociodemographic and individual preferences are with regard to receiving messages as they relate to evacuation procedures (Rod et al., 2011). The transformative framework has been used since its inception for public and private agencies to either update or change policies from the outcomes of the participants where the outcomes focused on action attainable solutions.

For this study, participants were able to provide a voice for the communities in an action-oriented solution for change in social media policies and use as it relates to disaster incidents and large, planned events (Creswell, 2013). The use of the

transformative framework aligns with qualitative research methods by involving the research participants as a valuable resource tool for governments and emergency management officials (Creswell, 2013). The transformative framework is an action-oriented research framework (Creswell, 2009) where the actions and information provided by the participants will assist emergency managers in deciding the type social media message to provide throughout an emergency incident or event.

Social media presents a new and unique method of communication between all levels of government and emergency management officials (Khan et al., 2014). The use of the transformative framework helped me focus on positive social change, action solutions, and value-based research within this study and encompass those key elements into creating or updating governments in the greater Houston-Galveston, TX region and emergency management official's social media policies Social media has the potential to be a very powerful tool prior to, during, and following a disaster and/or large-scale, planned event, and in combination with the transformative research framework (Takahashi, 2015). In this study, I used the research questions and responses in an effort to have more collaboration with the community members, stakeholders, and government. The study consisted of the elements of transformative framework laid out by Greene and Caracelli (1997) in the mid-1990's. Creswell (2009) stated, that the elements within the transformative framework empower research participants through their involvement in providing an importance of the social media platforms) to use during a disaster and how to collaborate with the community and stakeholders. Furthermore, within the transformative framework, the study participants had a voice in an effort to improve the

lives of those that reside or conduct business within the greater Houston-Galveston, TX region. The application of the aforementioned elements in an evolving technological communication means that is intended to save lives and property during disasters and share information as it pertains to large-scale events. In this study, I incorporated the components of transformative theoretical foundation into a current and modern form of communication seeking value-based information as social media is being used more and more each day.

Literature Review

The literature review is organized into multiple sections. I focused on communication as it pertains to disasters, natural and human-caused, and large-scale events in the first section. Next will be social media, its use, and capabilities. In the final section, I provide discussion on collaboration with the community and social media as a form of two-way communication. As there is a paradigm shift in messaging from government officials and emergency management officials due to the increased demand for information from the community, the literature review helps me show the importance of the use of social media messaging prior to, during and following a disaster incident or large-scale, planned event.

Communication

Communication is the ability to share information through traditional methods along with social media for community collaboration with government leaders and emergency management officials. Prior to and during a disaster, information must be shared internally and externally by government leaders and emergency management

officials (Haddow et al., 2014). Furthermore, as Haddow et al. (2014) stated, communication with the community and stakeholders must be a priority during disasters. Disaster and event communication must be planned well in advance in order to provide timely and accurate information so that lives and property can be saved (Pressman & Schneider, 2009; Stanleigh, 2011.). Through understanding of the region, many challenges can be avoided so that the community and stakeholders may gain trust in their government leaders and can make better decisions to safeguard their lives and property.

Communication is a challenge when disasters strike and information is continuously in demand. Therefore, communication is an essential element in disaster and event planning, response, and recovery efforts (Houston et al., 2014). It is the most discussed topic in after action reviews from agencies following a disaster incident or a large-scale event for public service agencies (FEMA, 2008). Communication is key to sharing messages so that the public is informed about a disaster or a large-scale event. As disasters and events are becoming more frequent around the globe, communication is key to saving the lives of the community (Mazoera et al., 2006). Since natural disasters typically cannot be prevented entirely, effective communication remains a substantial challenge (Iowa State University, 2016; Feldman et al., 2015).

The greater Houston-Galveston, TX region has experienced disasters of grand magnitude and continue to host large-scale events such as the National Football League (NFL) Super Bowl, National Collegiate Athletic Association (NCAA) Final Four, and the Major League Baseball (MLB) World Series. Effective communication can provide information about the large event(s), traffic management plans, and information if there is

an emergency within the event. This communication has typically been conducted with mass media in order reach a large percentage of the population (Houston et al., 2014). As stated by Michael Walter (2017), the message must be clear and concise so that all persons can understand the message and the warning, and so there is no misunderstanding of the message.

Prior to and during a disaster or a large-scale event, where the norm has been altered, communication of accurate information is vital to saving lives and property. When messages come from government agencies there must be trust from the community in their government (United States Office of Government Ethics, 2000). Trust within the government has profound positive impacts in effective disaster communication. Government leaders and emergency management officials need to understand the perception of the public when drafting messages.

Having knowledge of the public's perception of the disaster or large-scale event will contribute to crafting clearer messages to reduce the public's disruption during disaster response or evacuation and gain better compliance to directives by those leaders (Stein et al., 2011). Having an understanding of what information is wanted by the public will provide government leaders and emergency management officials with insight in what messages are to be communicated. Furthermore, Stein et al. (2011) stated that communication by emergency managers has a prominent role in how the community responds to messages during a disaster.

Information is valuable during a disaster. During disasters, natural and/or human-caused, information is in demand and that demand is never-ending by government

leaders and the community (Haddow et al., 2014). Government leaders and emergency managers must communicate with the public and stakeholders by providing timely and detailed information. Haddow et al. (2014) stated that when providing the community and stakeholders information on disasters and events, the community's necessities and interest are foremost so they can make informed decisions. With effective leadership government agencies and emergency management officials can provide the community with accurate information when there is a high demand for it.

An effective leader can articulate the agency's mission and goals throughout the disaster incident or event when communicating to the community (Plachy, 2009). When there is good leadership with government agencies and emergency management official's communication will be effective and resourceful (Pressman & Schneider, 2009).

Furthermore, as leadership styles have changed over the previous two decades due to a more diverse world communication can be difficult when community members and stakeholders are under extreme stress (Deegan, 2009; Pressman & Schneider, 2009).

Former Secretary of State James A. Baker III quoted in regards to leadership planning said "proper planning prevents poor performance" (James Baker III, personal communication, September 30, 2017). Furthermore, through good leadership, communication with the public has a greater chance of not being misunderstood (Novitski, 2008). Effective and efficient leadership coupled with good communication skills between the greater Houston-Galveston, TX communities and stakeholders will provide adequate information in order to make informed decisions about disasters and large events that impact their lives.

As disasters are occurring more frequently, communities are becoming more susceptible to the disasters; government and emergency management leadership is key to providing information to the communities through effective communication skills and tactics (Masozera et al., 2006). Disaster and event communication will have little influence if the community and stakeholders do not receive the messages (International Federation of Red Cross and Red Crescent Societies, n.d.). Communication from government leaders and emergency managers is key to keeping the public informed during times of disaster and large-scale events. Large-scale events have the ability to alter the day-to-day life of the community and when not informed it can cause undue stress. Communication from government leaders and emergency managers must reach the public (Haddow et al., 2014). Previous methods of communication with traditional media is only a portion of the way leaders can effectively communicate with the greater Houston-Galveston, TX region. With the advent of social media, there has been a paradigm shift in the way leaders can communicate to the community and stakeholders (Nauheimer, 2009). Communication has changed over time, and government and emergency management leaders will need to conceptualize the most efficient and effective mode with modern technology to relay messages (Feldman, et al., 2015). Disaster and event communication can be accomplished through traditional media as well as social media in an effort to continue to provide accurate and timely information to the community and stakeholders in the greater Houston-Galveston, TX region. With communication being the number one item in all after action reports following disasters

and large-scale events, social media can improve communication avenues for all that participate in disaster and event planning, response, and recovery.

Social Media

The internet and social media has changed the mode of communication between leaders and the community into a two-way communication avenue for information sharing. As more technology is being introduced during disaster and event planning and response it increases the capabilities to share information. Social media has been able to assist in maintaining order and allowing for public service agencies to continue to provide essential functions (U.S. Department of Homeland Security. 2008). The use of social media has modernized the communication landscape for government leaders and emergency management officials (Haddow et al., 2014).

Social media is a new form of conversation between the community, stakeholders, and government agencies to share information that directly impacts their area or family. Social media has become a critical component in disaster and event communication (Haddow et al., 2014). The technology with social media has brought a new mode of communication that is changing the way government leaders and emergency managers communicate with their communities and stakeholders.

As technology continues to expand, social media concurrently grows in the role of disaster communication and response (Arellano, 2013). Arellano (2013) further mentioned that social media continues to advance the way people communicate in the world today. Throughout the previous disasters, that have struck the greater Houston-Galveston, TX region, social media has proven valuable in the role of communication

and information sharing from government leaders, emergency management officials, and between community members. Social media has drastically grown in its ability to share information as an alternative communication process (Haddow et al., 2014).

Social media provides alternative modes of communication and has the ability to strengthen the current communication systems that are in place (FERENCE, 2014). When disasters strike in the greater Houston-Galveston, TX region there is a chance that power will be intermittent or shut off due to varying factors from the disaster (Mark Rayne, personal communication, September 3, 2017). Social media is the alternative route for providing information when television or radio stations are out of power or not on back-up generator power to relay the messages to the community (Takahashi, 2015). Arellano (2014) argued that social media can become a centralized place for leaders and the community to share information about damages, service outages, needs of a community, and what help can be provided by public safety and service in conjunction with volunteer groups.

There are numerous benefits to using social media as a tool in public relations with the community and stakeholders (Khan et al., 2014). The use of social media creates an openness with the government agencies and emergency management offices to share information as the disaster and event changes. With the demand for more transparency, using social media can improve the transparency between the community and government and emergency management agencies at all levels of government throughout the disaster and events (Khan et al., 2014). With timely and effective messaging, transparency and information access can increase through an evolving social

media network (Noji, 2011). The benefits of social media communication has allowed for transparency and community involvement when disaster strikes.

Utilization of social media has provided a manner and means for the community to become involved with their government and emergency management leaders. The use of social media allows the community to not only receive information but to share information and/or pictures that would be challenging to acquire (Khan et al., 2014). Using Social media has become a new form of two-way communication that provides instant information, pictures, and intelligence between the community and their government leaders (Feldman, 2015; Noji, 2011). Feldman (2015) further stated that the use of social media is an effective tool for two-way communication when disasters impact a large geographical area. The community and stakeholders, through the use of social media, are a useful source of information about damage, road closures, detours, and travel related information in specific areas as public safety agencies cannot be the eyes and ears across the entire disaster impacted area (Noji, 2011). Social media use involving the community, during disasters and large-scale events, have reshaped government and emergency management communication techniques.

Utilizing technology has the ability to reshape the culture of disaster and event communications (Stanleigh, 2011). Using social media has the ability to influence decision-making as the community provides information and/or pictures about impacted areas due to hurricane damage or traffic congestion from an event (Eisenman et al., 2007). As Jacobs (2016) stated, social media was not intended to be used as a warning system for government agencies. The technology within social media has changed the

culture of communication between government leaders, emergency management officials, the community, and stakeholders in order to save lives and preserve property.

The application of social media has proven to be an effective and efficient communication tool for disasters and events in the greater Houston-Galveston, TX region. The flow of information, intelligence, efficiency, and effectiveness of social media are advantages of using social media to bolster disaster and event communication (Houston et al., 2014). The implementation of social media has proven to be valuable tool for sharing information to the community, and a tool for the community to share with government leaders, emergency management officials, and within their community (Haddow et al., 2014). The collaboration between the government, emergency management, community, and stakeholders through the use of social media during disasters and large events in the greater Houston-Galveston, TX region will strengthen communication, information sharing, transparency, and the bonds of each community in times of need.

Collaboration

Richey (2010) stated that technology is a tool that increases collaboration with the community. The benefits of using social media technology in collaborating with the community and stake-holders allows for timely, effective, and efficient information sharing and dissemination (Jacobs, 2016). Collaboration allows for community involvement and provides a sense of inclusion though social media technology (Khan et al., 2014). The implementation of social media technology has increased the value in the community through collaboration efforts by all levels of government, emergency

management officials, community members, and stakeholders in the greater Houston-Galveston, TX region.

When community members and stakeholders are able to communicate with government leaders and emergency managers using social media prior to, during, and following a disaster or event positive outcomes can prevail. With community and stakeholder involvement during disasters and events there is more of an increase in public value than when government and emergency management agencies are working alone (United States Government Accounting Office, n.d.). The application of social media is an avenue for collaboration between the government leaders and emergency managers where message collaboration can take place in an effort to save lives and property. When collaboration is encouraged there is a dialogue between the community and government rather than a one dimensional approach that has previously been used (Feldman et al., 2015).

Collaboration with the community using social media as communication has numerous benefits when disaster strikes or a large event takes place in the greater Houston-Galveston, TX region. When a disaster strikes or a large-scale event alters the day to day life of the community there is a demand for information by the community and stakeholders from government leaders and emergency management officials. Through collaboration with social media the community, stakeholders, government leaders and emergency management officials have the ability to supply each other collectively and collaboratively in becoming a network of information for effective response, recovery, and general information (i.e. traffic closures, flooded streets, alternate routes, etc.) to

accomplish the goal of life and property safety (Steelman et al., 2014). Collaborative social media communication accomplishes the supply and demand from those in the community and leaders with a pulse of the disaster or event.

Disasters and events continuously change through their lifecycle, and there is a balance within the lifecycle when collaboration takes place through the sharing of information through social media (Steelman et al., 2014). Collaboration through the use of social media includes the community and stake holders in the decision making with the government leaders and emergency management officials. As social media is used more during disasters and large events communities are becoming more resilient. The use of social media has bridged the gap between government, emergency management, the community, and stakeholders to collaborate information from previous modes of communication. When social media is used during disasters and large-scale events it brings the whole community and government together where the good in people shine (Whitney & Cooperrider, n.d.).

Utilizing Social media allows for a two-way communication means which embodies collaboration with the community and stakeholders. This two-way communication collaboration increases the sharing of information that results in an enormous benefit for all parties involved (Khan et al., 2014). Community members and stakeholders, prior to the use of social media, were information consumers prior to and during a disaster. Through collaborative efforts, with social media usage, the previous information consumers have now become beneficial information sources not only to government and emergency management, but to one another (Noji, 2011).

When collaboration takes place between all that are affected by disasters and large-scale events sincerity, distribution, and trust are given and received (Khan et al., 2014). When government leaders and emergency management officials take the time to invest in social media usage and collaborate with the community a trust is built by all that participate (Stich & Miller, 2008). As collaboration takes place, the community will engender trust in their government leaders and emergency management officials that will build future positive relationships. Trust is gained progressively and through collaborative efforts and is essential when lives and property are at stake. As trust is built it can also be lost swiftly (Alexander & Nank, 2009). Trust in government leaders and emergency management officials can be built and strengthened when collaborative communication efforts are made when disasters strikes. Through collaborative communication, using social media, during disasters and events, trust, openness, and involvement has the ability to take place in the greater Houston-Galveston, TX region by all those who participate.

Summary and Conclusion

In Chapter 2, I discussed the literature review strategy for this study. In this chapter, I reviewed the literature search strategy; theoretical framework; literature review related to communication, social media, and collaboration during disasters and large-scale events. There are numerous articles that focus on communication and the use of social media. What is missing with the previous research is the community's use of social media during disasters and events. In the literature review, I provided numerous strengths in communication and social media usage with their essential approach to the

use of social media as a communication method and means. Houston et al., (2014) discussed the gap within the research as to who uses social media and what platforms are used during disasters and events for effective communication. What remains to be studied is what social media platforms are used to gather the most information from and to the government leaders and emergency management officials, and what information the community is seeking.

All the reviewed literature within this study address how social media can be used as a two-way form of communication and information collaboration tool between the government leaders and emergency management officials. The justification from the literature is ultimately to provide an avenue of information sharing so that the community and stakeholders lives can and will be saved and reduce the amount of property damage.

In this chapter, I discussed the literature research strategies that I used for the literature review and where the literature came from. The theoretical framework was expanded in how I used it in this study. The chapter concluded with the literature review in the sections of communication, social media, and collaboration. The information within this chapter help me lay the groundwork for the method of study that is discussed in Chapter 3.

Chapter 3: Research Method

Introduction

The purpose of this qualitative study was to address the perceived use of social media as a source of detailed information from government officials during natural or human caused disasters and/or large-scale planned events. As Medaglia and Zheng (2017) mentioned, previous research has only focused on the government's use of social media and not the public's interaction with government agencies and the collaboration through social media. Social media has the ability to advance disaster communication to communities for natural and human caused disasters (Houston et al., 2014). As social media is a relatively new manner of information dissemination, through this study, I was able to bridge the communication gap between the community and government officials and emergency managers through social media.

The current methods of information dissemination are reactive in nature which has the potential to place communities in harm's way by not providing adequate information prior to a disaster incident (Khan et al., 2014; National Hurricane Center, n.d.). Through collaborative efforts, information that is provided to the community members and stakeholders prior to and during a disaster has the ability to them save lives and/or property.

In Chapter 3 I explain the research design and rationale for this study to include describing central concepts, research tradition and approach, and rationale. I also describe the role of the researcher, provide a description of personal and professional relationships, any researcher bias, and research ethical issues. In addition, I detail the

qualitative methodology used in the study. I discuss how participants were selected, interview instrumentation, data collection procedures, and the data analysis plan. Issues of researcher trustworthiness are discussed, which includes credibility, transferability, dependability, confirmability and ethical procedures. In conclusion, I detail ethical procedures of participant agreements and their treatment.

Research Design and Rationale

The research questions for this qualitative study are the following:

RQ1: What information from government agencies and emergency management officials do community members and stake-holders perceive to be the most critical to receive via social media prior to and during a disaster incident or large-scale event?

RQ2: Which social media platform(s) would citizens be more willing to follow from emergency management officials during a disaster incident?

RQ3: How does the community perceive that government agencies and emergency management official can better collaborate with them?

The central concept of this study was to identify what the community and stakeholders perceive to be the most useful information shared via social media between government leaders, emergency management officials, the community, and stakeholders in the greater Houston-Galveston, TX region as it relates to disasters and large-scale events. As social media is used more frequently, it is increasing in use in the field of emergency management (Arellano, 2013). Social media has the ability to become a major instrument in emergency management due to its unique characteristic of two-way communication (Takahashi, 2015). Because of this, social media use has the

ability to provide more accurate information to specific sections of the area and not just generalized information as traditional media has done in the past.

The transformative theoretical framework was chosen for this study due to its capability of providing an active voice for the community and stakeholders on how information can be specific to their areas. This can affect social media policy changes in the greater Houston-Galveston, TX region. Previously stated by Houston et al. (2014), mass media has characteristically been a one-way method of communication for large metropolitan areas. In this study, I use a generic qualitative inquiry with a semi structured interview method.

The generic qualitative inquiry method, with the open-ended interview questions, can assist in developing new or updating the current policies and improve emergency management programs (Patton, 2015). I chose this method to find out what social media platform(s) the community and stake holders are using most often. This is to ensure that there is a collaboration between the community and officials prior to, during, and following a disaster or large-scale event.

As social media has unique characteristics and is gaining popularity, using generic qualitative inquiry provided me with the type of information the community and stakeholders seek from government officials and emergency management officials, which social media platform to monitor during the disaster or event, and how to better collaborate with one another. Social media use has opened up limitless possibilities for communication to and from governments and the communities (Khan et al., 2014). In this study, I focused on the information, platforms, and the collaborative efforts between

the parties. Social media is a modern information sharing tool that is growing each year (Phillips, 2016). Additionally, social media use is expanding following each disaster and through generic qualitative inquiry information can be gained to better use social media for future disasters (Luna & Pennock, 2018).

Role of the Researcher

The role of the researcher is very important in collecting information while conducting qualitative research (Creswell, 2013). In this study I was a nonparticipant observer. Due to my limited personal social media use, I felt the role of an observer was the best course of action for this study. I collected data from the responses to the interview questions, and if the study participant wanted to show me an example of how information could be shared I also recorded that data.

My relationship with the study participants was limited. I had no personal or professional relationship with the participants. I did not use my position as a local government employee to gain research participants or influence their participation in my study. The participants did not have any contact with me, and I think this was an advantage to the study, as the information did not have a researcher/participant history and/or a bias. As participants were strangers, there was a reduced bias that could alter the study outcome.

I randomly selected individuals to participate in this study that have lived in the greater Houston-Galveston, TX region for Hurricane Ike, September 2008, through Hurricane Harvey, August 2017. I introduced myself and the study that I was conducting and provided them with a flyer detailing the study. Upon their approval to participate, I

provided them with the participant admonishment form. I chose individuals that have lived through both disasters as social media was used for both large-scale disasters, and there has been substantial growth of social media between the two disasters and large-scale events between the aforementioned dates as well.

I worked with my study participants on a location that they felt comfortable with for an interview. I provided the study participants with an outline and a consent form that addressed the reason for the study to gain their trust and authority to participate. I protected participants identity when they preferred for me to do so, as there are numerous social media outlets used that could reveal who the participants were and I wanted to protect from any negative backlash for their participation in my study.

Methodology

The geographic area of study is made up of numerous cities and counties in the greater Houston-Galveston, TX region. I limited the study to the cities of Houston, Pasadena, and Galveston, Texas, which are within Harris County and Galveston County with one participant residing in Ft. Bend County. I selected these cities due to these areas having the greatest probability of being impacted by a no-notice disaster or large-scale event. Participants ranged from all three cities and within the unincorporated areas of Harris and Galveston Counties. Participants needed to have resided in the region prior to Hurricane Ike (2008) through Hurricane Harvey (2017) disasters. The participants' ages ranged from 18 to 80 years of age. Participants also ranged in gender, ethnicity, and socioeconomic status.

I used a combination of purposeful and snowball sampling techniques to selected participants. Purposeful sampling was used to gather information from the participant who have lived through the aforementioned disasters. Additionally, I used snowball sampling to locate my study sample population from a previous participant that were willing to provide information on social media collaboration during the COVID-19 pandemic . Furthermore, I asked the participants if they used any social media as a means to gather local or regional information, and if they wanted to participate in study on how to better collaborate with government officials and emergency management officials during disasters and large-scale planned events. I requested that participants had previously used and currently use social media, but I did not need to know how much in exact detail.

As the greater Houston-Galveston, TX region is geographically vast with a multitude of cultures within the region, I located study participants in person at various businesses, food and beverage establishments, and from large retail businesses in order to obtain a wide range of ages and ethnic groups for my sample population. Once I introduced myself to the individual, I asked if they would like to participate in this study on social media communication as it pertains to disasters and large-scale events. Once the individual agreed to participate, I provided the participant with the participant agreement form and had them fill it out. Once the participant agreement had been completed, I began the interview. The participant interview took approximately 10 to 20 minutes to complete in order to obtain all the information for the research questions.

Although I had planned on a sample size of 10 - 15, I ended up only interviewing eight participants due to reaching data saturation. Once I achieved saturation and found out which social media platforms the representative sample size used to gain local and regional information; it is at that point I began to analyze the obtained data and apply the information to my research questions. Purposeful sampling was used to get an in-depth understanding of how the government officials and emergency management officials can better use social media in a collaborative effort with the community members and stakeholders. (Patton, 2015). Additional participants would have been added to the sample to verify whether any new information given by a participant could be corroborated. I used face-to-face interviews with the instrumentation limited to digital audio recording devices for this study.

Instrumentation

The instrumentation for data collection was a digital audio recorder, interview questions, observation sheet, and notes. I used a digital audio recording device as the primary data collection device. I also used an observation sheet and notes to document any actions and/or non-verbal clues that the digital recorder could not pick up.

Due to my professional career, I have used digital audio recording devices for criminal investigations and am very familiar with their set up and function. I used two recording devices during all interviews so that if one device had a malfunction (i.e. battery died or storage space full) the information would be obtained with the second audio recording device. Both recorders have a key lock button so that if the device was touched the recording would continue without any interruption of data collection.

I developed the study questions for this research using my personal experience with multiple disasters and large-scale events, not only participating in but developing after action reports for disasters and events, communication. As a public safety official, I have overheard the community and stakeholders in the greater Houston-Galveston, TX region discuss how information was not shared or was confusing when provided by government and emergency management officials. I developed the research questions in such a way as to assist the government and emergency management officials in the information and method of communication the community and stakeholders seek pre, during, and post disaster or large-scale event. See Appendix for interview questions.

I analyzed and then dictated the data provided by each interviewee. I had contemplated using a third party to dictate the interviews from the audio recording devices for ease of time, but after some thought I decided against this as I did not want any information summarized or anything left out. Since I have dictated numerous interviews in the past I was comfortable with my ability to type the interviews as I was able to document themes. Therefore, I did not use outside dictation or software for transcribing of the interviews.

Discrepant information was documented in Chapter 5 within the interpretations of the findings. If there was any discrepant information it was not excluded but used in the findings and inquired more about during the interviews. Although information may be discrepant, I did not exclude it from the study as it can provide a new or different train of thought as to how social media can be used for information dissemination during a disaster or large-scale event in the greater Houston-Galveston, TX region. There was a

potential for issues of trustworthiness of the information gained by conducting the study, especially if there was any discrepant responses, and they were handled accordingly.

Once the data were gathered from the participants and recorded they were analyzed. The findings within the interviews told me, as the researcher, what social media platform(s) the community and stakeholders use during a disaster incident or large-scale event, what information emergency management agencies can provide to the community during those incidents or events, and effective community collaboration with emergency management and government officials. The analysis also helped me gain new ideas, goals, or information that the community would like to know from the government officials prior, during, and following a disaster. The information was arranged into themes and categories to show a pattern of sought after platform and information.

The analysis of the information was used to make sense of the information gathered during the interviews and the research questions. Patton (2015) stated that this analysis begins while conducting the interviews to make sense of what the participants were seeking and how they could contribute information during disasters. I analyzed the data, developed patterns and themes, and then I had made sense of the information. . In conclusion, the data from the interviews were fairly represented to government officials with what the community sought, as well as reveal my purpose of this study to build a stronger collaboration between community and government officials.

Issues with Trustworthiness

I used the information gleaned from this study to inform government officials and emergency management officials on the needs of a level trustworthiness of the

information from the participants and their information. According to Patton (2015), the credibility and understandings will greatly depend upon the trustworthiness with research participants. Rapport building techniques such as spending time to get to know my participants, contributed and built trustworthiness and I was able to gain information on how social media could be used as a more collaborative tool within the greater Houston-Galveston, TX region. Trustworthiness can be achieved through credibility, transferability, dependability, and confirmability.

This study was one of openness without any attempt to prove which social media platform is better than another, or to manipulate any findings from the interviews. An open and honest study is one that provides a clear description of the information collection and analysis of obtained information (Nowell et al., 2017). I did not alter the responses to the interview and open-ended questions in an effort to guide the study in any particular way. I hold myself to a high level of respect and honesty within my daily work as a local government employee, and that has transferred to my academic studies and research; therefore there was not any attempt to sway the study. ; The data from this study can ultimately be used to save lives and property during disasters. Another quality of credibility within qualitative research is reflexivity.

Reflexivity of the research presented my scholarly meticulousness to the participants within this study. By being involved with the study, and actively listening and observing I was able to address any concerns that presented itself during the study in order to avoid any biasness. I looked for themes and avoided rigorism as the study progressed so as not to become narrow-minded within my study and the information

provided by the participants.. Furthermore, I continued to reflect on the information that was provided and categorized the information through thematic analysis that was relevant to this study for the interpretations of the findings in Chapter 5 as referred to in Norwell et al. (2017). Transferability is another area of trustworthiness that was taken into consideration as the study evolved.

There was a concern for transferability from participants. They could have hesitated to provide adequate information or descriptions of what was being studied in this study. This issue could be due to the lack of government providing accurate information for specific areas in the greater Houston-Galveston, TX region and the participant not thinking that the government officials or emergency management officials would care about what they had to say. These concerns were suppressed by allowing the participant to remain anonymous during the interview. By remaining anonymous there was the chance for participants to provide a full description of which social media platform, information, and how to collaborate with the officials and the community to better prepare, respond and recover from disasters and to provide the utmost insight to yield useful results (Nowell et al., 2017). The participants were selected due to their residence history in the greater Houston-Galveston, TX region from September 2008 to the present, and for their experience in how government officials and emergency management officials have reacted to previous disasters and planned events. The next issue of trustworthiness was dependability within the research.

The research questions offered a guideline of what platform, information, and how the community/stakeholders can collaborate with government and emergency

management officials. Ensuring consistency with each participant supported the dependability of the information gained from each participant. Observation sheets and detailed notes backed the information provided by each participant to further strengthen the dependability of the data. The final issue of trustworthiness was confirmability within this study.

Confirmability was addressed in numerous ways for this study. As this study will be presented to government officials and emergency management officials in the greater Houston-Galveston, TX region; the participants were specifically selected due to their history in the region within the allotted timeframe due to the numerous natural and human caused disasters as well as the multitude of large-scale, planned events. Another way that confirmability was addressed was if there were any biases that were discovered through the interviews and have the participant further explain their reasons for bias to a particular social media platform over others. A final manner of confirmability within the study was by relaying the sincerity that I have for this study in order to collaboratively save the lives of our community members and stakeholders through the use of social media prior to, during, and after disasters. Through these items of trustworthiness, this study is rich of information for local officials, and community members during disasters, and used to update or develop new policies. This can be done through an exhaustive manner to ensure adequate information is gained from the study participants (Nowell et al., 2017).

Ethical Procedures

Upon Walden University Institutional Review Board (IRB) review and approval for this study, I selected the participants as previously mentioned. The greatest concern throughout the study was the treatment of the participants. Informed consent agreements were signed by each participant prior to their interviews and properly stored with the researcher. Each participant was offered confidentiality and they were assigned a number throughout the study. The interviews were conducted in-person and the locations were agreed upon by the participant and interviewer. Each participant was treated with honesty, fairness, and ethically so that the most useful and honest information could be obtained by them for this study. If a participant requested to be removed from the study that request was granted and a replacement interview was conducted. All of that participant's information was removed from the study, and their involvement was thanked. Furthermore, the treatment of the information was with the utmost safety and security.

The interviews were recorded on digital audio recording devices, one primary and one secondary, along with handwritten notes of the interviews that were taken during and following the interviews. Following the interviews, the recording were stored on an external hard drive and backed up on a thumb drive that is stored at the researcher's residence in a safe. The data are only accessed by the researcher within his residence. The data are stored there and no plans for its destruction within five years as this study can be used in the future for other research in the Houston-Galveston, TX region. There

were no conflicts of interest between the researcher, their employment, and having a professional relationship with Public Information Officers in the region as well.

Summary

In this chapter, I focused on the methodology for this study on the use of social media as it pertains to disasters in the greater Houston-Galveston, TX region. This chapter began with the purpose for the study and the research questions. Furthermore, in this chapter, I went on to explain in detail the research design and rationale to include the central concepts, research tradition and why, and transitioned into the role of the researcher. The role of the researcher described how I, as the researcher, conducted my interviews and became an observer of the study. Moving into the methodology I described the population to be studied, their criterion, and how they were selected. I concluded with issues of trustworthiness of the gathered information such as credibility, transferability, dependability, confirmability, and to finalize the chapter ethical procedures of how I gained access to the participants and their treatment.

Chapter 4: The Research

Introduction

Disasters of all types can affect the greater Houston-Galveston, TX region. Disasters can be human caused from intentional acts such as terrorist attack, natural as in hurricanes/flooding, or accidental in nature which include individual error at a petrochemical facility. Furthermore, there are a number of largescale, planned events that also impact the communities in the greater Houston-Galveston, TX region. In this study, I determined which social media platforms are most effective to use in terms of information dissemination during disaster incident and planned event management in the greater Houston-Galveston, TX region.

As disasters continue to impact the daily functions of a community, social media has become a more widely used information sharing platform for emergency management officials and the community to save lives and property (Huder, 2012; Phillips, 2016). When a disaster or event impacts the greater Houston-Galveston, TX region, government officials and emergency management officials may inform the community of the type and scope of the disaster incident in order to prepare for or respond to the incident or event. Through data collection and data analysis, I determined which social media platform is most effective in information sharing during disasters and planned events.

The research questions for this study focused on what information the participants sought prior to, during, and following a disaster or a large, planned event, what social media platform(s) the participants used, and which platform(s) government and

emergency management officials should use. Participants sought collaboration avenues and dialogue with those leaders and officials in relation to disasters and events. My focus with the research questions was to look at how the community members use social media, and how they are willing to collaborate to have buy-in for helping their community through a disaster. Social media has become an avenue of effective and resourceful communication during disasters that will continue to grow (Arellano, 2013; Pressman and Schnieder, 2009).

Vital information is needed during a disaster and the use of various social media platforms is increasing with each disaster and large event. The use of social media has the ability to extend government services and have citizen participation to collaborate information between the government officials and the community (Khan et al., 2014). At the end of this study, I concluded which social media platforms are most effective during disaster incidents and large events.

In Chapter 4, I first discuss the setting and the demographics of the study that I conducted. Following that, I discuss the data collection, data analysis and the evidence of trustworthiness for the study. The chapter concludes with the results of the study and the summary of the chapter.

Setting

I chose the Southeast region of Texas, encompassing the cities of Houston and Galveston, and the surrounding unincorporated areas of Harris, Galveston, and Ft. Bend Counties as the geographic area for this study. The totality of the area varies geographically and in population, with a large metropolitan city, as well as smaller

municipalities throughout the region. I chose this region due to its close proximity to the Gulf of Mexico for tropical storms and hurricanes, the Port of Houston and the petrochemical facilities that line the port, and the large, planned events within the region throughout the calendar year. With the enormous population of the region and the diversity of the residents and stakeholders, I chose this region in order to obtain what social media messages and platforms participants sought information from government and emergency management officials during disasters and events.

I also chose the Southeast Texas region because of the large population influx that has been taken place over the last 5 years, and the continuation of growth within the region. The participants provided information that not only pertained to their personal lives but also for their employer/organization. The region is home to numerous worldwide petrochemical corporations and other Fortune 500 companies, and with this study I provided insight into how to use social media to communicate to their friends and family, as well as their customers and co-workers. The participants of the study all had input on what messages they would like, and on what platform(s), for disaster related messages, as disasters had impacted every participant in a different way due to the vast geography of the greater Houston-Galveston, TX region. Each participant had a personal experience relevant to the study; from flooding, evacuation, power outages for numerous days, or a direct impact from a hurricane. Those personal experiences had an influence on their answers to the interviews.

Demographics

The participant demographics of this study represented the whole community for the greater Houston-Galveston, TX region. As I conducted random sampling of participants, I ensured that the participants would be a representative of the population of the region. When I sought out my participants for the study, I made sure that I had representation from the entire geographic region of study and not only the City of Houston, the City of Galveston, and the more populated area of Harris County, TX. Using random sampling I was able to meticulously identify persons that I approached for the study so that I was able to gather information from all areas and genders of the region. I interviewed eight community and stakeholders members within the geographic area of the study. The participants were both male and female. I made sure that the participants had a range in age, which ranged from their 30s to their 70s for this study. Of the participants, there were two men and six women that participated in this study. A further breakdown of the participant demographics for the study is that there were two Hispanics and six Caucasian participants. All participants met the criteria that were outlined in Chapter 3. The demographics of the study were a fair representation of the region by age, gender, location, and use of social media.

Data Collection

Upon obtaining approval from the Walden University IRB (reference #08-19-21-0549787), I began the process of pursuing study participants for this study. Due to the large geographic area of the greater Houston-Galveston, TX region, I wanted to make sure that I had participants from the three larger counties, the municipalities, and of the

age spectrum aforementioned in Chapter 3. The interviews of the participants took longer than I had anticipated due to the region returning to work and various other restrictions due to the COVID-19 pandemic. I provided each participant with a consent form prior to their interview that was signed by them and myself.

I conducted the interviews using a structured set of questions. I did not deviate from the questions as I wanted to make sure that I was able to gather information in the same way from each participant, and to reduce any chance of not obtaining information for the three research questions. The interviews consisted of 15 questions from a template that I developed previously. The interviews ranged in time from 7 to 15 minutes after the initial rapport building time took place. I conducted the interviews within an office building in downtown Houston, TX, outside of an office building in downtown Houston, TX, a participant's place of business, and within their residences. There were no variations in the data collection from what was presented in Chapter 3.

I categorized the interview questions to gather information for three areas of study as it pertained to social media from the community member's perspective. The categories were: (a) what information would you like to know about the disaster/event, (b) what social media platform(s) do you obtain disaster/event information from, and (c) how can government and emergency management officials collaborate with the community. These categories were meticulously thought of so that the study can help provide government and emergency management officials in how the community and stakeholders seek information when there is an imminent disaster, natural or man-made,

or a large, planned event that has the potential to disrupt their daily lives for a period of time.

Data Analysis

The data were analyzed upon completion of the participant interviews using the descriptive research method for this study. According to Lambert and Lambert (2012), descriptive research analysis is the summary of obtained information through interviews during a study for a/an specific event(s). Furthermore, descriptive research analysis is used to describe a phenomenon (disaster or planned event), and the unique characteristics to obtain a more in-depth understanding of the event(s). This type of analysis can interpret any repetitive themes and concepts discovered during the study (Nassaji, 2015). By following this model there were specific tasks that took place during the study.

Following the descriptive research analysis model, I took audio recordings that were saved to an external hard drive and on my laptop, and I played the interviews individually as I transcribed the interviews in Microsoft Word. I chose to transcribe the interviews myself and not use a computer program so that I would not miss anything that a participant may have said due to some of the interviews having background noises. I chose to manually transcribe the interviews due to my more than 13 years of experience in public safety and transcribing numerous interviews. Additionally, a written interview provided me the chance to make additional notes on the page of notes I took for each participant's interview.

The taking of additional notes while transcribing the interviews ensured accuracy of the information that the participant was providing. With the transcription, I was able

to provide a detailed all-inclusive summarization of a disaster or planned event for the individual. There were a few instances where the audio recording was inaudible and therefore the data are not exact. When the interview was inaudible, I listened to the recording a few times and determined that the information obtained prior to the inaudible recording did not alter the study outcome. At the conclusion of transcribing the interviews I was able to cross-reference the notes and document any themes and categories. I was meticulous about the accuracy of the information so as not to create any false bias or unintentional grouping of information when taking notes during transcription of the interviews.

There were multiple categories and themes that resulted from the study. A category from the study is what information the government leaders and emergency management officials provide the public. The themes that emerged from this category were facts, road closures, and maps/pictures and other visual aids. Participant 3 stated “people don’t read,” and Participant 4 specified that maps or pictures “would be beneficial” when sending a message. Another theme was road closures. Participant 2 wanted to know which roads are closed in the area where their office conducts business, and Participant 5 mentioned that they would like to know if there would be any pre- and post-disaster road closures in any effected areas. A final theme from this category was that the participants wanted to know the facts. Participants revealed that they sought the facts of the disaster and a timeline of the impending disaster.

Another category that was developed in this study was what social media platform(s) are to be used before, during, and after a disaster and/or large event. All

participants are users of social media daily for various reasons such as news, family, friends, etc. Participant 3 stated “I use social media every day for everything.” The main theme for this category was that the participants use Facebook and Instagram with some using Twitter, TikTok, and Whatsapp. ”I use Facebook and Instagram to get information from everywhere” Participant 8 stated. Each participant would like the government and emergency management to use Facebook, Instagram, and Twitter to share information. As Participant 3 stated “if not one, then use the other” when discussing which platform to use in times of distress.

The final category of this study was how to best collaborate with community. The main theme for this category that the participants mentioned was dialogue. Participant 7 stated that “dialogue is important.” Participant 6 was the only one who identified that “the messages should be from the government to the citizens because not everything is easy.” Additionally, the participants were an even split on if they would post to government or emergency management social media page prior to this study. Participant 8 stated, “I would share information with the government leaders” when asked about sharing information on government agency social media page. Furthermore, Participant 1 mentioned “I have not posted on a page before and there is nothing that I would not.” The final theme that was developed is that the participants were in agreement about doing a virtual town hall meeting to gain buy-in or inclusion in planning for the next disaster through social media or other technological avenue. In reference to a town hall meeting for information collaboration as it relates to disasters and planned events, Participant 2 stated, “It could be. The more input you get.” With the categories

and themes for this study, I emphasize the importance of social media messaging for disasters and events and how the community and stakeholders can achieve involvement when planning for the next disaster.

The analysis of the information took more time than I anticipated. I processed the information and discarded any irrelevant information from the study. I then identified themes and categories, which are discussed in detail in the results section of this chapter. I took the audio recordings and detailed notes with the approach of trustworthiness of the information and the study participants at all times throughout the study.

Evidence of Trustworthiness

As discussed in Chapter 3, the trustworthiness of this study was beneficial information to government and emergency management officials and the greater Houston-Galveston, TX community before, during, and after disasters to update and/or develop new policies as it pertains to social media messaging in the greater Houston-Galveston, TX region. The information gathered from this study can be used to inform government officials and emergency management officials on the needs of a level trustworthiness and collaboration of the information from the study participants. As Patton (2015) mentioned, the credibility and understandings greatly depends upon the trustworthiness with study participants. Through rapport building and a passion for serving the community and stakeholders of the study area I built a level of trustworthiness with the participants of this study from the onset. There are multiple avenues in which trustworthiness can be attained. For this study credibility, transferability, dependability, and confirmability were the most effective.

The first area of trustworthiness for this study was credibility. I achieved credibility through documenting detailed notes during and following the interview of each participant. Detailed notes that are taken during the interview process provide a description of the participants' answers and added value to the study (Creswell, 2013). Through rapport building prior to interviews a sense of trust is built that forms a short social relationship that adds to credibility (Janesick, 2011). I never attempted to sway or manipulate any participant towards one or another social media platform during the interviews. After the interviews no participant showed or expressed any interest in observing the notes that I took during the interview.

Transferability of this study can be applied to other areas of the State of Texas and the United States of America, as there are disasters and events that take place across the state and the country (Amy Zugner, personal communication, January 8, 2022). I was able to reflect on the information provided and make sure the information and notes are detailed to develop categories and themes. As a public safety official, I was able to reflect on the information provided and thought about how the information can be applied to other areas of the country to assist my professional network as it pertains to future disasters and planned events. Furthermore, transferability was accomplished through each participant wanting to remain anonymous for the study. Although each participant signed their name on the consent form, all participants requested to remain anonymous at the end of the interviews.

I achieved dependability through consistent notes for each research question, and the storage of the digital audio recording of the interview. I took notes during the

interview in the possibility that the digital recorders failed. This allowed me to look at the information post-interview in a more strategic mindset as outlined in Patton (2015). I have taken detailed notes in my professional role, and am confident in accurately detailing information so that categories and themes were developed following the interviews.

I attained confirmability through the use of purposeful sampling. The participants spoke about their experiences, of participants that could annotate their experiences that had resided in the greater Houston-Galveston, TX region beginning in September 2008 until the present time. I made sure that I did not present any biases towards one social media platform from another to the participants. I worded my research questions to encourage honest and personal use type answers from the participants. Additionally, I safeguarded that the research questions did not have any unintentional bias in how they were worded. I took extensive time to develop the research questions and the interview questions so that to avoid any biasness toward one social media platform or what information was gathered from the study participants. I created research questions that were generic and not leading towards one or more social media platforms. This method supports O'Sullivan et al. (2008), that the generalized questions will have a greater representation of the whole community and not a narrowed scope study demographic. I carefully crafted the questions so that the participants would provide an unbiased or platform favoritism related answer. There was extensive emphasis on trustworthiness of the study to ensure that there was adequate representation of the information by the participants and the safety of the information provided during this study. The consent

form was very detailed about the study and the careful handling of the information and the participants, and this solidified the level of trustworthiness of the study. The information gathered during the study was documented into different categories and themes within the results section of this study.

Results

I conducted the study in the greater Houston-Galveston, TX region for multiple reasons. The demographics are very diverse and the geographical layout is very vast in size. I chose to do this area for the study for numerous reasons, with the main reasons are to save lives of the diverse communities and global stakeholders that have business ties to the region. In this qualitative study, I focused on 3 research questions. I developed the answers provided by the participants 3 categories. From there 10 themes emerged from the data that were collected. I have presented each category with the associated theme in the following sections.

Figure 1*Disaster and Event Social Media Research Questions, Categories, and Themes*

Research Questions	Category	Theme
RQ1 – Qualitative: What information from government agencies and emergency management officials do community members and stake-holders perceive to be the most critical to receive via social media prior to and during a disaster incident or large-scale event?	Information by government and emergency management will provide	<ul style="list-style-type: none"> • Facts • Road closures • Maps/Pictures/Visuals • Multiple languages
RQ2 – Qualitative: Which social media platform(s) would citizens be more willing to follow from emergency management officials during a disaster incident?	Social media platform(s) during disasters and/or planned events	<ul style="list-style-type: none"> • Platform(s) • News and information • Social media for government and Emergency Management
RQ3 – Qualitative: How does the community perceive that government agencies and emergency management official can better collaborate with them?	Collaboration with the community	<ul style="list-style-type: none"> • Dialogue • Posting to Government/Emergency Management Social Media • Feedback and/or Planning

Information by Government and/or Emergency Management Officials***Facts***

Each of the participants almost immediately stated that they wanted to only hear the facts of the disaster incident. Every participant said that they did not want to hear any opinions or speculations about what a disaster had on the possibility of traveling for evacuations or of the severity of damage to the region. The participants also mentioned that they wanted to know what kind of disaster will impact their area due to hurricanes,

tropical storms, adverse cold weather and extreme heat. For example, Participant 1 revealed “it would be helpful to have an idea of time estimate of when the disaster should be expected. Not just the hit (hurricane landfall), but for how long maybe we should be dealing with the event. That would help people prepare.” Echoing this, Participant 3 divulged that they wanted to know what the government leaders and emergency management official are expecting from the impending disaster, and any contact numbers for resources following any potential destruction caused by a disaster. Knowing the type of disaster would help the participants determine if they would evacuate or remain in their residences. Participant 8 supported this by saying “what kind of disaster we’re talking about. Is it going to affect us in a physical way, or a monetary way? What kind of preparations. I would need to know or prepare for.” This fact was important as the majority of the study area has large and tall trees that could cause major damage and severe bodily injury if the participant remained in their residence for a strong wind incident or a hurricane. As Participant 7 mentioned “who’s exactly going to get hit. Who is going to be affected? Um, what kind of things we can expect. Like when damage and things like that” when notified of an impending disaster incident. The participants would like to know if a weather incident is one of high humidity with below freezing temperatures that may cause ice on the roadways over bayous. This fact will assist commuters and stakeholders as there are a large population in the region that commute great distances for work, and cross multiple bayous or smaller bodies of water that could be dangerous during limited visibility. Following participants wanting only the facts of the incident, the next thing requested were what roads may be closed.

Road Closures

Each participant wanted to know which roads were closed due to flooding or debris making the road impassable. This information is important as there are a number of pre-identified intersections or portions of roads in the greater Houston-Galveston, TX region that are known to flood, and knowing this information ahead of time will assist the community and stakeholders in safe evacuations or returning to their residences. Flooded roadways are very common due to the large geographic area and minimal topography of the study area. Having this knowledge afforded the participants to more accurately plan getting to and from work or their businesses, and the ability to plan ahead if the participant was on a shift at a hospital or in public safety. In reference to evacuations due to hurricanes or tropical storms, Participant 4 mentioned that “if you (government or emergency management official) know which roads are closed you won’t create more traffic jams as people are trying to get out.” Another theme that was identified was that of visual displays used by officials.

Maps/Pictures

Each participant mentioned that they would like to see a map or picture of the disaster. Participant 6 stated that “images catch the eye” when government, emergency management officials, and the media are talking about a disaster or an event. Each participant stated that they would like to see maps or pictures as they could look at the map or picture and make the best decision about the disaster for their family’s safety and well-being. Participants felt as though they could get more information from maps and pictures than from someone talking to them as the pictures could not be altered. The

maps and/or pictures would help the participants reduce their level of panic as they could see the impact and how the disaster is moving closer to them. During a disaster, when anxiety is elevated, a picture is easier to get a message across as people may not understand or read messages by officials. The final theme for the first category is the use of multiple languages.

Multiple Languages

All participants mentioned that messages need to be provided in multiple languages due to the greater Houston-Galveston, TX region being a very culturally diverse region. The interesting discovery with this theme was that not all the participants spoke multiple languages. Every participant mentioned that there should be a minimum of two languages, English and Spanish, for the messages by government and emergency management officials. When asked if different languages would help, Participant 8 stated, “They must think about the demographics, YES!” This question was interesting and the answer by the participants showed that each participant cared about their neighbors and others when a disaster strikes. The care and thoughtfulness of strangers in times of disaster and wanting to make sure that the whole community was informed struck me when I was interviewing, transcribing, and developing this theme. The love and care for complete strangers and putting others first when a disaster impacts a community and prior to impact was very important to the participants.

This category of information by government leaders and/or emergency management officials resulted in the participants wanting factual information along with visual aids and in multiple languages prior to and during a disaster.

Social Media Platform(s) During Disasters and/or Planned Events.

Platforms

The theme of this category is which social media platform(s) the participants use. Each of the participants mentioned that they use Facebook and Instagram on a daily basis. It was interesting that immediately after asking which platform(s) the participants use they responded with Facebook. When I asked what social media platforms they use, Participant 5 stated, “Facebook. Really Facebook is all that I use.” The participants took time to think of the platform that they use after Facebook. Instagram was the second most mentioned social media platform used by participants. After Instagram the participants ranged from using Twitter, WhatsApp, and TikTok social media platforms to gather and share information or to check on family and friends. Participant 4 said, “I use Nextdoor very very much,” this showed me that there is a range of secondary platforms that the study participants use as sources of information and information sharing. With the countless platforms available and the range of ages of the participants it was interesting that there were not more platforms mentioned. Each participant had a smartphone with them during the interview. This helped me conclude that the participants have the ability to obtain or share information at a moment’s notice, but selected to use Facebook and Instagram as their primary platform. The next theme for social media platforms was news and information.

News and Information

When I asked the participants what they used social media for, the most stated response was for news and information. Participant 7 mentioned that they went to their

social media platforms for current news and to see if there were any changes from a previously reported incident or an update on a disaster. Some indicated that social media provided information closer to real time than that of traditional television news media sources. In reference to traditional news media, Participant 3 stated that “real news is one-sided.” The participants also use social media to keep up with family and friends. Furthermore, all the participants revealed that social media is an avenue to see what is going on in regards to friends and family without having to talk to them or see them, or for those friends and family members who do not live close. The final theme for this category is what platforms government and emergency management should use.

Social Media for Government and Emergency Management.

When asked about what social media platforms that government and emergency management officials should use the participants provided a few different platforms and explanations to the platforms they mention. These are the top three platforms that the participants used: Facebook, Instagram, and Twitter. Some of the participants mentioned the other aforementioned platforms, and Participant 5 pointed out that government officials should use, “whatever platform will reach the community.” Participant 4 stated, “All of them, when giving correct information” about disasters. This theme focused on three main social media platforms and the participants again thought about the whole community and wanted to ensure that everyone was getting adequate and accurate information from official. The final category and theme discuss collaboration between government and emergency management officials and the community.

Collaboration with the Community

Dialogue

When discussing collaboration between government and citizen the theme of dialogue emerged. Each participant mentioned that there must be a dialogue between the government or emergency management officials and the community. When asked about collaboration between citizen and government, Participant 7 stated, “I think a dialogue. That’s always important.” Additionally, Participant 6 spoke about how the government can relay mass notifications and that the citizens have the ability to add to the notification with real time information or pictures. When there is a dialogue with the government or emergency management officials the community feels included in sharing information, and feels as though they are heard by the officials. “I think that would be really effective. Especially because even if you have a large; those meetings or conference with large participants; you can still get information from individual focus in the chats” Participant 1 mentioned. “I think that getting feedback from the community is never a bad thing” stated Participant 3 about communities and government or emergency management officials working together. When the citizens feel included and that their voices are heard it builds trust in the government and emergency management officials in those critical moments (United States Office of Government Ethics, 2000). Following dialogue I asked questions regarding if a participant had posted on a government or emergency management official’s social media.

Posting to Government/Emergency Management Social Media.

This theme of posting to a government or emergency management official's social media had not been identified by all participants. Not all participants have posted on a government or emergency management officials social media prior to this study. I asked those who had posted to a governments social media platform if there was any response and only three had posted with two receiving responses. The participants who had received responses were active on social media on a daily basis. The participants who have not posted on a government or emergency management officials social media said that they will in the future if they feel the need to, or that they want to be more involved. The final theme for this study was future collaborative efforts.

Feedback and/or Planning

When asked about providing information, flooded roadways or traffic conditions, for future disasters or planned events all participants mentioned that they would. The majority of the participants stated that they would participate in the use of Zoom for a virtual town-hall style planning meeting to assist with government and emergency management for future disaster and event planning. The opportunity to use Zoom anywhere is the reason that the participants are more likely to join that avenue of a town-hall versus an in-person type. The virtual setting allows the participants to be anywhere and have the availability to offer feedback and planning ideas via spoken word or via messages in the chat feature. All the participants mentioned that they would provide feedback willingly when asked, if the information helps saved lives, their property or that of the community. Participant 3 stated that, "feedback is never a bad thing." Others

divulged that they are not willing to do it in person and feel more comfortable behind a computer and keyboard. The participants were not hesitant to provide feedback, it was only the manner in which the feedback was provided determined if they would or would not.

This study had three research questions where I asked fifteen interview questions to my participants. I analyzed a combination of the research questions and the participants' response and then put them into categories and themes for this study. At the conclusion of this study the participants used social media for various reasons and were willing to work with their local government and emergency management officials to ensure that all parties are prepared for the next disaster.

Summary

In Chapter 4, the study of social media in the greater Houston-Galveston, TX region was conducted with a person from each of the counties in the region and representation of the two major municipalities. The participants were a good exemplification of the demographics of the study area by age and gender. The interviews were conducted in a safe and ethical manner, the answers analyzed, evidence of trustworthiness, and concluded with the themes and topics from the interviews. Upon completion of the interviews, the participants sought factual information, not historical information, and they wanted maps and pictures to display the information. Furthermore, the participants all use Facebook and Instagram for their main source of information and to check on family and friends; also they wanted a dialogue with the government leaders

to feel included through in-person or online avenues. In Chapter 5, the interpretation of the findings, any limitation, and future recommendations will be discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative study was to seek out what social media platform(s), type of message(s) and collaborative efforts between government and emergency management officials from the community's perspective. There have been countless studies and articles on the use of social media, but the focus of this study was from the community member's perspective and the information that they seek as it relates to disasters and large-scale planned events. The nature of this study was phenomenological. I examined how social media can be utilized more efficiently prior to, during, and post disaster and planned events with the input of community members. I selected the participants using purposeful and convenience sampling techniques. I used semi-structured interviews to obtain the data that were then pragmatically analyzed into three categories based on the research questions and further analyzed into themes discussed in Chapter 4. I conducted this study to assist government and emergency management officials in the greater Houston-Galveston, TX region on the information being sought after by the community when there is imminent danger due to a disaster or when there is a planned event that can disrupt their daily lives.

The findings of this study were that the community is seeking unbiased information when there is a disaster that can/and will impact their lives and property, an eagerness to help their neighbors, and the use of symbols for rapid messaging. The findings have the ability to assist other local governments and emergency management

officials across the globe to save lives and property of their community members and stakeholders.

Interpretation of the Findings

The findings of the study extend the knowledge of the assertions found in Chapter 2; that social media is a useful communication tool when used in conjunction with the community through open dialogue and collaboration of information when a disaster strikes or there is a large, planned event that disrupts the daily lives of the community. In addition, the findings are in coordination with the transformative theoretical framework. This study did not focus on the everyday use of social media for news or information, and only focused on disasters and large, planned events in the greater Houston-Galveston, TX region. During the data analysis, it was discovered that the participant's response focused on disasters and not planned events.

In Chapter 2, the literature review, numerous articles discussed communication, social media, and collaboration. The findings of this study confirm that social media is an avenue for communication and collaboration with the community and stakeholders. In the literature review, I discussed social media, the history of its use, benefits, and methods of collaboration that can be applied towards planning, preparations, and response to disaster incidents and planned events. The findings of the study show that social media is used a great deal by the participants for various reasons with the underlying reasons of news or information and communicating with friends and family. When discussing communication with government and emergency management officials, the participants of the study had minimal response and some mentioned that they have,

and others that they will, communicate with government or emergency management officials in the future. In addition, the findings showed that the information can extend the use of social media.

When discussing collaboration with government and emergency management officials, I discovered that the participants are willing and eager to assist officials in planning and preparing for the next disaster. I found that the participants wanted to be included in the decision-making process to protect their lives and property and that of complete strangers. As emergencies continue to grow, and the use of social media for information sharing during those emergencies is used, the participants told me that they are willing to use social media to collaborate with leaders and officials. Participants said that they will communicate with local leaders, emergency management officials, and complete strangers who are willing to help them when a disaster strikes. The participants showed love for a complete stranger and were willing to invest their time with local leaders so that everyone is informed and ready for the next disaster. These findings will extend the knowledge of the use of social media for the next disaster or event. As Feldman et al. (2015) mentioned, people who reside in vulnerable areas are willing to use social media to share information. The findings from this study will help government leaders and emergency management officials update their current social media policies. When the community trusts their leaders, and feel as though their voices are heard, they are more willing to share the message from leaders in the future and follow their directives when disaster strikes (United States Office of Government Ethics, 2000). I discovered that social media is the first place a majority of the participants receive and

share critical information, before looking at traditional media sources. This knowledge will extend the discipline that local government agencies could update their public information policies and practices.

The transformative theoretical framework focuses on building relationships within society (Creswell, 2013). The use of this framework will build relationships between the community, stakeholders, government officials, and emergency managers to collectively progress disaster, natural or human-caused, planning, response, and recovery through the use of social media messaging (Creswell, 2013). Additionally, the transformative framework will be integral in assisting in changing the lives of community members, stakeholders, and the participants in regards to social media messaging policies by government leaders and emergency management officials. This study was a prime example of how social media can be used to foster strong relationships between government and emergency management officials and the diverse communities of Houston and Galveston, TX.

The emphasis of the transformative theoretical framework is relationships within society and social media is an avenue that can build strong relationships. As Creswell (2013) stated, the transformative research framework involves the participants making an impact through their voice to provide assistance in a positive change within the region and beyond. When a disaster strikes and information is shared between elected and appointed officials and the community, relationships can become stronger. Furthermore, as Greene and Caracelli (1997) recognized, the use of transformative framework provides a value-based platform when attempting to alter or change current public information

messaging policies as it pertains to social media messaging. The transformative framework is a prime example of how relationships have the ability to form and grow when all parties involved are willing to assist each other to save lives and property. The participants provided a voice for the research region and beyond in an action-oriented style solution for adaptation in social media use and policies for the local governments. Additionally, the use of the transformative framework took the information that the participants provided and placed the information in action. In the course of this study, I provided a deeper insight into how the various communities within the greater Houston-Galveston, TX region can more effectively use social media for messaging prior to, during, and following a disaster or event. As social media is an evolving technology, it may save lives and property through the foundation of the transformative theoretical framework within this qualitative study.

The findings of this study were in alignment with the use of the transformative framework. The participants mentioned how they are willing to be the voice to the government leader and emergency management officials in what information they sought when there is a disaster or a large, planned event that can and will alter their daily routines.

Limitations of the Study

As discussed in Chapter 1 of this study, I identified limitations to this study. The three limitations that arose from the execution of the study were: media preference by age of participants, numerous platforms available to the participants, and the relationships

between the community and government and emergency management officials. I interviewed eight participants, at which point, I reached saturation.

The first limitation was the media preference by age of the participant. The participants that were older in age did seek out information from traditional media sources as previously identified in Chapter 1. The interesting thing that I noted was that this age group also used social media to gather information and seek more information from different platforms. This limitation was found to not be an issue, as the older participants went immediately to social media for information as well.

Another limitation to the study was the numerous social media platforms that are available to obtain information from. This was of concern due to the large number of social media platforms that are available via a cellular telephone or computer. Although this was a limitation to the study, I discovered that all the participants sought information from two social media platforms as their main source and then each participant had their own subsequent platforms to gather any additional information they may have wanted.

The final limitation I identified was the relationship between the community and government and emergency management officials. Trust is the most important factor when building the relationship between the community and government and/or emergency management officials. This limitation was found to be unfounded, as I got the impression that the community members have trust in the government and emergency management officials in making the right decisions for the overall safety and well-being of the community. Furthermore, the participants will listen to the messages that are sent by the officials. Community members have provided information and were willing to

collaborate in the future. The limitations to the study that were initially discussed were minor as the participants readily used social media to gather and share information on two main platforms no matter what the age of the participant and were willing to assist officials when given the opportunity.

Recommendations

In this study, I identified multiple recommendation for future research that could better assist local governments and emergency management officials in disaster prone locations and when planning for large-scale events. The use of symbols in social media messaging, before a disaster or event planning and preparations, additional public information office (PIO) staffing, and more collaboration with the community are the identified areas for future considerations. With these considerations I feel that the region can become better prepared and able to make more informed decisions as it relates to disasters, natural or human-caused, and planned events.

Each participant mentioned that maps or pictures would be beneficial when sending messages about disasters. They said that the use of symbols would be beneficial for various reasons, including the diversity of the region. Barham and Everett (2021) stated that the use of symbols is a crucial component of language that has dated back millions of years in archaeological findings. Symbols can cross cultures and offer a visual learner the ability to see the symbol or read the message to understand the nature of the message. It will be up to each agency to determine which symbol to use for a disaster or planned event from preprogrammed symbols to one generated for that specific

disaster or event. Another recommendation is to continually connect with the diverse communities throughout the year.

Emergency management officials can use social media to connect to the diverse communities throughout the year to ensure that those communities that are English as a second language (ESL) are aware of and prepared for disasters and events. Although September is national preparedness month according to Ready.gov, social media is an avenue to provide monthly awareness information to the diverse communities that are within the greater Houston-Galveston, TX region in an effort to ensure that those communities and stakeholders are prepared. This can be accomplished with short messages and semiotics once a month where the message builds upon itself. The use of social media has the ability to provide tidbits of information with links to additional information that the receiver can then access to further their knowledge. This can be done with the public information officer currently or with added staff.

With the addition to the PIO staff, more preparedness messages can be sent out. The additional staff or a collateral duty in preparing and delivering preparedness messages monthly ensures that the community has the resources to be prepared and plan adequately for disasters and events. This will be dependent upon budgets but has the potential to prevent complacency as it pertains to preparedness and planning for disasters. With the additional staffing it affords the opportunity to have continual collaboration with the community and stakeholders. This collaboration on a continual basis can create inclusion of the community members and the ability to share the information with their social media networks. This study revealed that there is an interest and a willingness to

collaborate with the government and emergency management officials when there is a disaster.

The aforementioned ideas are recommendations for government and emergency management officials with disaster messaging utilizing social media for future research. There have been numerous articles and studies conducted with the benefits of social media and how it can be used for information sharing and this study has identified areas for future research in conjunction with the literature review from Chapter 2. With this study, I identified multiple areas of positive social change.

Implications

This study can positively impact social change on an individual level, community level, and for local governments and emergency management officials when planning, preparing, and responding to disasters and large, planned events. For the individual level, this study has implications of positive social change in a way that makes them feel connected to the disaster or event. Effective information interchange as it pertains to a disaster can be problematic and this study aimed to change that through positive collaborative use of social media (Steelman et al., 2014). By sharing information or through collaboration, the positive outlook on the government and emergency management officials pre, during, and post disaster or event by the individual community member through inclusion is a benefit to all parties. During disasters collaboration is encouraged where the citizens are the experts in what is taking place in their neighborhood and social media is the avenue that the participants are willing to use (Feldman et al., 2015). Collaboration through the citizen will ease the burden from

public safety and have the ability for current photographs to be shared with the government leaders in decision making meetings. In relation to the community, the benefit to collaboration and constant communication has the potential for positive social change as the community is connected to the local leaders and officials. The whole community mindset can be felt by those communities who might otherwise feel left out or forgotten about. There are numerous positive social changes for the local government leaders and the emergency management officials. The most important positive social change is that the local government leaders and emergency management officials do not feel the burden of doing all the work. Social media and the community is used to assist the government and emergency management officials that changes the role of the community member from a consumer of information into an information producer and analyst through collaboration (Noji, 2015). Through collaboration and continual social media messaging, there is buy-in from the community for preparedness and planning, and the community will actively provide information to the government and emergency management officials so that decisions can be made with as much information as possible. When the community, government, and emergency management officials work in a collaborative manner safety for the community and first responders is at the forefront when disaster strikes.

Conclusion

When disaster strikes, social media can be a very effective tool to reaching those in need and sharing critical information to those leaders and first responders. This study showed that social media is used by the community on a daily basis for information

gathering and sharing. Furthermore, this study can be used by local leaders and emergency management officials prior to and during disasters and large, planned events in the greater Houston-Galveston, TX region and abroad when developing policies and techniques with social media messaging. The community values the information that local leaders provide and at the same time the participants all stated that they are willing to help complete strangers and their local leaders in times of disasters. Throughout this study it was interesting to discover that the participants focused on extreme weather incidents and not on planned events.

The collaborative efforts and the combination of modern technology of social media has the capability to help neighbors and complete strangers in the worst of times and in preparing for the next disaster. Government leaders, emergency management officials, community members, stakeholders have the ability with social media to get the message out more than in the past. Government leaders and emergency management officials can use the technology, coupled with the community, to save as many lives and as much property as they can, and this can only be done when the government and emergency management work collaboratively with the community. It is my hope that this study reflects the whole community mindset in the worst of times and everyone is willing to help out in an effort to make a positive social change to the greater Houston-Galveston, TX region.

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Appendix: Qualitative Social Media Interview Questions

Research Questions	Interview Questions
<p>RQ1 – Qualitative: What information from government agencies and emergency management officials do community members and stake-holders perceive to be the most critical to receive via social media prior to and during a disaster incident or large-scale event?</p>	<p>What information would you like to know pre/during/post disaster or event from government/emergency management officials?</p> <p>What information you feel is more important pre/during/post a disaster or event?</p> <p>Tell me what information you feel is less important pre/during/post disaster or event?</p> <p>How could maps, pictures, videos, etc be beneficial in social media messaging?</p> <p>Which languages would be most beneficial?</p>
<p>RQ2 – Qualitative: Which social media platform(s) would citizens be more willing to follow from emergency management officials during a disaster incident?</p>	<p>What social media platforms do you use?</p> <p>How often do you use social media?</p> <p>What do you use social media for?</p> <p>What platforms do you think government and emergency management official should use for disasters and event info sharing?</p>
<p>RQ3 – Qualitative: How does the community perceive that government agencies and emergency management officials can better collaborate with them?</p>	<p>What method of collaboration should take place (i.e. citizen to government or a dialogue between citizen and government officials?)</p> <p>What types of messages would you post to a government/ emergency management social media platform? (i.e. downed tree, flooded street)</p> <p>If you have posted a previous message, what type of response did you get?</p> <p>Post storm/event, what type of suggestions would you post on an official’s social media platform on how they did?</p> <p>Would you prefer a social media forum, survey, or town hall meeting for planning the next disaster or event?</p>