

**EXPLORING PUBLIC PERCEPTIONS OF THE RECOVERY RESPONSE AS A  
RESULT OF HURRICANE MICHAEL'S LANDFALL**

by

David Wiley Lovett

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy in Public Administration

Helms School of Government

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Approved By:

Dr. Carlton Lewis, Committee Chair

Dr. George Richard Austin

## **Abstract**

Hurricanes remain among the most frequent and costliest natural disasters to impact the United States both in terms of loss of property and life (Rudden, 2022; NOAA, 2021a; NOAA, 2022a, 2022b, 2022c). Hurricanes Harvey, Irma, and Maria brought renewed attention to the subject of disaster recovery as they collectively cost the nation over \$373 billion dollars in damage and over 3,200 lives lost in the 2017 hurricane season (NOAA, 2022a, 2022b; Reguero et al., 2018; USNHC, 2018). Property and lives are at most risk during the first 72 hours following a major hurricane (Col, 2007; Kohn et al., 2012; Dourandish, Zumel, & Manno, 2007; Harris et al., 2018). While previous research focuses on communities' long-term recovery, limited data has been collected involving the roles of government in immediate recovery efforts. Major hurricanes become a focal point in the lives of those affected, and through these events they shape public expectations, assessments, and attitudes toward government leadership (Darr, Cate, and Moak, 2019). The qualitative study solicited the perceptions and opinions of the survivors of Hurricane Michael in Bay County, Florida to expose previously unknown phenomena related to the storm's effects on the community and its work towards recovery. Recommendations to shorten immediate recovery time include continuous pre-storm collaborative planning, pre-storm public education campaign, improvements in communication, increase in personnel, and linear research into immediate recovery.

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## Chapter 1 - Introduction

Hurricane Michael resulted in 16 deaths directly attributed to the storm, while another 43 deaths occurred as a part of the recovery process (Wamsley, 2019). Wamsley (2019) noted the National Oceanic and Atmospheric Administration (NOAA) NOAA upgraded Hurricane Michael from the Category 4 classification as originally assigned, to a Category 5 based on windspeed at the time of landfall. Only three other Category 5 Hurricanes have ever made landfall in the United States: Andrew 1992, Camille 1969, and The Labor Day Hurricane 1935 (Henson, 2015; Landsea et al., 2004; NOAA, 1969; NOAA, 2021a; NOAA, 2022c; Wamsley, 2019). Major hurricanes can decimate entire communities within just a few hours causing massive loss of life and billions of dollars in property damage (Blake, 2018; Kousky, 2013; NOAA, 2022a, b; Rudden, 2022; USNHC, 2018). Hurricane Harvey, Irma, and Hurricane Maria collectively created more than \$373 billion dollars in damages and over 3,200 deaths in 2017 (Rudden, 2022; Jonkman et al., 2018; Yabe, Rao, & Ukkusuri, 2021). Hurricane Michael created damages in excess of \$25.5 billion dollars in 2018 (NOAA, 2022a, 2002b). NOAA estimated the price of a hurricane making landfall in the 2020 hurricane season to have an average cost to the nation of over \$19 billion dollars per event (2022a). The immediate recovery of a community following the impact of a major hurricane require proactive actions from multiple governmental agencies prior to, during, and after the event to ensure adequate support to hurricane survivors and to minimize the financial burden to the rest of the nation (Hurley, 2019; Manning, 2020; Motavesseli & Hajialiakbari, 2017; Prewitt et al., 2011; Quarantelli, 2000).

The expedient restoration of the infrastructure and government services of an area impacted by a major hurricane depends heavily on the decision-making of leaders prior to the



storm making landfall and the follow-through actions during and after the storm. The study uses a qualitative methodology of research in exploring the thoughts and perceptions of those who have firsthand experience and knowledge of the complexities of the issues related to immediate recovery efforts. The study utilized an online survey to collect data on the thoughts, opinions, and perceptions of the local population of Bay County, Florida and their experience with the immediate recovery of Hurricane Michael to identify the previously unknown phenomena that prolong immediate recovery efforts (Yesilada et al., 2015).

This chapter provides a background of emergency management services in the United States with attention given to legislative actions that have shaped the emergency responder profession over the years. The chapter additionally contains an overview of the problem statement, the justification and purpose of the research, a biblical integration, nature of the research design and the research questions used to guide the study. The chapter concludes by providing a list of key terminology used during the study and a summary of the main points.

### **Background**

Major hurricanes can produce catastrophic damage to a community and the financial impact can create a devastating ripple effect throughout the U.S. economy (Deryugina, Kawano, & Levitt, 2018; Dunning, 2020; Khalid & Yousaf, 2020; Kousky, 2013; Lee, 2021; Wang & Paul, 2020). The National Oceanic and Atmospheric Administration (NOAA) reported 40% of jobs created in America originate in the shorelines of coastal communities and account for 46% of the gross domestic product for the nation (2021a). The Gulf and Atlantic coastlines of the United States encompass over 3,700 miles of shoreline vulnerable to major hurricanes with population densities increasing as the popularity of coastal communities increase over time (America, 2017). The U.S. Census Bureau (2021) reported population densities increased in

coastal communities by 84.3% between 1960 and 2008, representing an increase of 40 million people. Non-coastal communities witnessed a 64.3% increase over the same period. NOAA (2022d) estimated over 127 million people live in coastal communities representing 40% of the country's population, yet the total land mass is only 10% of the total land in the contiguous United States (Reguero et al., 2018; Shao et al., 2020; Walls, Magliocca, & McConnell, 2018). Trends indicate the popularity of coastal communities continue, thereby, placing an increasingly significant burden on local governments to plan for the possibility of experiencing a major hurricane (Creel, 2003; Hinrichsen, 1999). The scope of the damage encountered by a major hurricane force local and state officials to seek assistance from the state and federal government to first bring civility and then normalcy back to the area (Willison et al., 2019).

The National Oceanic and Atmospheric Administration (NOAA) reported 40% of jobs created in America originate in the shorelines of coastal communities and account for 46% of the gross domestic product for the nation (2021a). A major hurricane can cripple production markets and increase unemployment levels exponentially (Deryugina et al., 2018; Khalid et al., 2020). Uncertainty in the financial sector is never well-received (Baum, Caglayan, & Xu, 2021). Major hurricanes can stifle investments and depresses stock markets and other financial indices (Feria-Domínguez et al., 2017; Walls, Magliocca, & McConnell, 2018). A strong federal interest vested in assisting local communities in the immediate recovery and restoration of hurricane ravished areas is in the economic and financial best interest of the American public (Lee, 2021).

State and federal governments provide for the general welfare of their citizens (U.S. Const. art. 1 § 8.1). Local governments are engaged in disaster management; however, the planning and actions of local leadership directly impact the time a community spends in immediate recovery (Col, 2007). O'Leary writes, "Virtually all disasters are experienced at the

local level, where many communities can expect to be 'on their own' for the first seventy-two hours after disaster impact" (Col, 2007, 1). This study examined the public's perception and opinion of local emergency response decision-making in the immediate aftermath of Hurricane Michael for the area of Bay County, Florida.

"Citizens are highly dependent on the local authorities when crisis occurs, but responders may be unable to immediately respond to civilians when a disaster occurs" (Admin., 2015. n.p.). Collier County, Florida adopted the slogan, "The first 72 are up to you" (Collier, 2021, n.p.) as a way of informing their citizens that the first 72 hours after a major hurricane may result in little to no support from traditional government services (Dourandish, Zumel, & Manno, 2007). Hurricane Michael, and other major hurricanes, provided evidence the Collier County slogan may need revising to extend the self-sufficiency period past 72 hours to 96 hours or greater (Batten, 2019).

ABC News (2017) reported Hurricane Andrew left areas of South Florida without electricity for up to three months with some pockets of the population without service for up to six months. Robles (2018) reported the island of Puerto Rico experienced power outages for up to 11 months after the landfall of Hurricane Maria. Hurricane Michael left 1.7 million people without electricity for up to two weeks and longer in the rural communities depriving people of basic services such as water, air conditioning, and refrigeration (EIA, 2018). Additionally, areas of increased population densities required more time to bring back essential services to the stricken area, thereby prolonging the suffering of hurricane victims (Hinrichsen, 1999).

The Constitution of the United States granted certain protection to the citizens of the United States including promotion of the general welfare to form a more perfect union (U.S. Const., pmb1). U.S. Lawmakers recognized the impact of major disasters on the citizenry and the

economic devastation that become the fiscal responsibility of the remainder of the country (Pielke et al., 2008). The first move to establish a structure to emergency management by a federal entity occurred in 1803 when sweeping fires devastated Portsmouth, New Hampshire. In response, the federal government enacted legislation which provided relief for the merchants of Portsmouth impacted by the fire (Clary, 1985; Roberts, 2009). The passage of the Congressional Act of 1803 marked the first piece of federal relief legislation that addressed the citizenry's need affected by disastrous circumstances (Clary, 1985). The federal government took a piecemeal approach toward emergency management assistance in the early years and only provided funding by passing legislation through federal congressional channels (Renda-Tanali, 2020). Congress provided legislative relief to communities with such infamous events as the great fires of New York City in 1835, the Chicago fires of 1871, the hurricane that devastated Galveston, TX in 1900, and the 1906 San Francisco earthquakes (IBTS, 2022). The 1935 Labor Day Hurricane served as a catalyst for the federal government to establish laws to provide standing federal funds for disaster relief to assist in rebuilding fallen economies caused by disastrous events (Drye, 2019).

During times of crisis, local government executives and state-level administrators provide calmness and clarity to the impacted area as the situation changes and evolves (Allen et al., 2011). Federal assistance to local and state municipalities in the recovery efforts after a major hurricane, prior to 1950, required introduction of congressional legislation to request funding from the U.S. Treasury to assist local communities in the recovery process (IBTS, 2022). The process was highly politicized and slow as victims of the hurricane continued to suffer.

The complexity of the immediate needs of hurricane recovery can quickly overwhelm local resources requiring the assistance of federal resources to restore civility and normalcy to an

impacted area (Birkland & Waterman, 2008; Carafano & Mayer. 2007; Cohen, 2019; Lee, 2021). For decades, the only immediate assistance available to local communities to assist in the recovery after a major hurricane was from non-governmental organizations and the state where the community resided (IBTS, 2020; Lucie, 2016; Scavo, 2008). Federal involvement in community preparation for a major storm prior to 1979 mostly involved the tracking and warning of the impending danger and limited funding for infrastructure repairs (Dupigny-Giroux et al., 2007). State and local officials are quickly overwhelmed with the herculean task of providing services and rebuilding a community in the aftermath of the landfall of a major hurricane (Birkland & Waterman, 2008; Cohen, 2019; Lee, 2021).

States institute prioritization policies to assist local level emergency planners on how the federal hazard mitigation funds can be allocated (Smith & Vila, 2020). Governor's responsibilities include adherence to federally mandated eligibility requirements such as cost-effectiveness, feasibility of recovery projects, and environmental considerations (FEMA, 2015). A state's governor also has the lead in developing initiatives to help local governments implement hazard mitigation grants in accordance with federal guidelines (Smith & Vila, 2020; Smith et. al. 2013). FEMA explained the role of the governor of a state as the primary coordinator for local and federal resources to provide for the public safety and welfare of the state's residents (FEMA, 2019b). FEMA further described the role of the governor of a state is to coordinate state resources, provide strategic guidance, and support local governments in coordinating assistance with other states and the Federal Government (FEMA, 2019b).

President Carter recognized the need for increased federal involvement to assist states through hurricane recovery and created Executive Order 12127 and 12128. These two executive orders created the Federal Emergency Management Agency (FEMA) (Kapucu et al., 2011; May,

1985; Moynihan, 2013; Mushkatel & Weschler, 1985). Congress passed the Homeland Security Act of 2002 in the wake of the September 11 terrorist attacks and created the Department of Homeland Security (DHS) (Bellavita, 2008; Brook & King, 2007; Moynihan, 2005; Relyea, 2002). FEMA became a directorate under the DHS banner in March 2003 (Gillies, 2006; Grunwald et al., 2005). The then Director of FEMA, Michael Brown, voiced his disapproval of the decision arguing the downgrade of FEMA from agency to directorate was a serious mistake that would create delays in responding to disastrous events when they occur (Gillies, 2005; Roberts, 2006; Schneider, 2005;). Brown's criticism was not unfounded, as witnessed in 2005 when the nation experienced the largest and costliest hurricane in the nation's history, Hurricane Katrina (Birkland & Waterman, 2008; Menzel, 2006; Morris, 2006; Sobel & Leeson, 2006). The actions and inactions of FEMA in the immediate days following Hurricane Katrina created confusion among emergency managers and questionable governmental responsibilities bringing compounding disaster components to a vulnerable society (Buxton et al., 2017, Daniels, 2007; Waugh, 2009).

Investigative findings from the U.S. House of Representative Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina revealed FEMA withheld federal funding to communities for disaster preparedness unless local agencies amended their disaster planning to include the actions necessary in the event of a terrorist attack (Ink, 2006; Senate, 2006). The Bipartisan Committee heard testimony from executives within the emergency management field that federal money granted to prepare communities for natural disasters garnered less priority than preparation of counter-terrorism plans (Roberts, 2006; Senate, 2006). The linking of federal dollars to local counterterrorism planning drew attention

away from the preparation and planning for natural disaster (Kapucu, 2006; Marshal, Picou & Gill, 2003; Parker et al., 2009).

### **Problem Statement**

The problem addressed in the study is the questionability of decision-making as it relates to the responsibility of the government in the immediate recovery process of a major hurricane. Anderle et al. (2009) and Burby (2006) contended the failure in decision-making of governmental authorities in the pre-hours of landfall of a major hurricane and in the aftermath of a storm contributed to compounding disaster components that prolonged the disaster recovery process. Hayward (2011) identified the ineffectiveness of response efforts as a lack of pre-storm education among governing officials.

The failure of government to provide effective assistance to the victims of a major hurricane through the recovery process is directly contributable to the lack of development of a clear recovery plan including multiple levels of government missions into local recovery (Bava et al., 2010; Ernest, Mladenow, & Strauss, 2017; Joint Effort, 2011; Kapucu, 2008; Kapucu & Garayev, 2013; Pathak, & Ganapati, 2020; Waugh, William & Streib. 2006). The failure to identify the proper governing authority through the preparation of an event, through the event itself, and then the immediate recovery phase perpetuates through the rank and file of first responders, creating similar problems on a micro-scale. The lack of planning created first responder's failures and negative impacts on the victims of an impacted area of the natural disaster (GAO, 2015; Prewitt, Weil, & McClure, 2011; Wheatley, 2006, Yukl, 2012; Vogelaar, 2007).

Rubin (2009) noted government leadership in the immediate hours following a major hurricane garnered little attention from the academic community. Rubin (2009) categorized post-recovery studies of government actions in the wake of natural disasters as a "flogging paper" that provided minimal excitement in the research process (p. 2). Rubin (2009) and Rouhanizadeh et al. (2019) provided similar opinions stating the issues of disaster recovery "lacks meaningful detail" (Rouhanizadeh et al., 2019, p. 41) and that the examination of failed policy implementation echoed hallow in the research community (Rubin, 2009).

### **Justification of Purpose and Significance**

**Purpose.** The purpose of the study is to identify previously unknown phenomena connected to the immediate recovery of a community and the perceptions of the survivors in the area of landfalling hurricanes. This project will bring attention to the gaps and failures in the existing administration of the post-recovery procedures with specific attention given to the need of more effective consideration in the form of federal intervention in safeguarding the safety and security of the individual while going through the immediate struggles of the recovery process (Birkland & Waterman, 2008; Carafano & Mayer, 2007; Cohen, 2017; Willison et al., 2019). The findings of the study may be used as a catalyst for other researchers to develop and expand upon to bring additional attention to the issues impacting a vulnerable population in the immediate aftermath of a major hurricane.

Denscombe (2003) and Mainardes, Alves, and Raposo (2010) explained exploratory research occurs when a phenomenon requires in-depth understanding to identify the cause and correction of the situation. Exploratory research required a qualitative approach to interpreting the phenomena as we are investigating the "how" and "why" the phenomena occurred in terms of an unquantifiable societal understanding of the problem (Borrego et al., 2009). Researchers



use exploratory research as a means to gain newfound familiarity with an existing phenomenon and obtain fresh understanding as to why a problem exists, thereby exposing the situation for further research (Swedberg, 2020). Bhasin (2020) viewed exploratory research as a method of exposing under-investigated problems where not much information is available. Bhasin (2020) argued the purpose of exploratory research is “to develop more understanding about the problem” (n.p.) where the outcome of the research may provide no clear conclusive outcome.

The resident population of Bay County, Florida provided the foundation of the study as the county experienced the full force of Hurricane Michael. The population of the county at the time of impact of Hurricane Michael exceeded 174,000 people (Census, 2022). An on-line survey soliciting the thoughts, perceptions, and opinions of those who experienced the storm, through to the immediate recovery efforts, served as the collection tool for the study. The study advertised the on-line survey through social media outlets, specifically Facebook and Instagram. The study allowed the survey to remain available on-line until the point of saturation or redundancy within the survey participants answers was achieved. Survey instruments produce the highest percentage of returns and accuracy, contributing to the overall reliability and validity of the study (Louangrath & Sutanapong, 2018; Miller, 1991; Scherpenzeel & Saris, 1997).

**Significance.** The study provides significance as it provided those in controlling positions a new perspective on decision-making in the immediate recovery of communities experiencing a major hurricane (Kayes et al., 2013). Additionally, the results of the study have a social impact where the data provided will assist local authorities in understanding the necessity of the dependence on state and federal agencies to assist in bringing normalcy back to the area as expediently as possible (Duncan et al., 2021). The results of the study will bring understanding

of the public's perceptions and expectations of the crisis to improve emergency planning and preparations for immediate recovery efforts (Birkland, 2006; Biedrzycki & Koltun, 2012).

The study provided perceptions of individuals of their understanding of the previously unknown phenomena experienced during the immediate landfalling of a hurricane (Drabek & McEntire, 2002; Rouhanizadeh, Kermanshachi, & Nipa, 2020). Knowledge of such data could be used by emergency services to assist in the planning and preparation of a major storm to reduce the immediate recovery times and restore normalcy back to the impacted population as quickly as possible (Lippert & Anandarajan, 2004). The results of the study may be used to further study the phenomena and expand upon the study findings to further assist communities in the planning and preparations for a major hurricane (Bowen et al., 2020; Holguín-Veras et al., 2014).

**Biblical Integration.** Paul wrote that those in governmental control are ministers of God's word (Romans 13:6, ESV). Romans 13:1 established the role of the citizen to be subjective to governing authorities, "Let every person be subject to the governing authorities. For there is no authority except from God, and those that exist have been instituted by God" (ESV). Romans 13:4 identified government executives as servants of the people, "for he is God's servant for your good" (ESV).

Christians accept the responsibility to protect society's most vulnerable members by providing assistance and support in times of crisis (Acts 20:30, ESV). With such credentials and God's approval to lift one into an authoritative position to govern over others, a high degree of loyalty among those that elected the person to the office should exist. The American public has little faith in the abilities of their elected officials and are deeply cynical about government and their ability to provide effective direction in the course of daily business (Associated Press,

2014). Much less is the confidence of Americans to trust elected officials and governmental principals in their ability to provide effective support during catastrophic events (Beyond Distrust, 2015; Nicholls & Picou, 2013; Raine & Perrin, 2019; Scholz & Lubell, 1998). Just 19% of Americans maintain a level of trust in the abilities of elected officials to run our government, with only 20% describing the government as well run. Elected officials have held in such low esteem that 55% of the public says "ordinary Americans" would solve national problems better (Beyond Distrust, 2015).

There is only one sovereign power reigning over all governments, whether they are large or small, wicked, or good, newly formed régimes or long-standing governments, and that is the sovereign power of God. "He makes nations great, and he destroys them; he enlarges nations, and leads them away" (Job 12:23, ESV). Man-made governments will eventually meet with, and end but the Kingdom of God will never be destroyed and never end (Daniel 2:44, ESV). While we continue to live under the laws of man, Christians have a responsibility to question those in decision-making positions and the laws they make. We all must subject ourselves to government but have the responsibility to be disobedient when officials act contrary to the teachings of the Bible.

### **The Nature of the Research Design**

The study design was qualitative in nature. Golafshani (2003) noted qualitative design provided an "approach that seeks to understand phenomena in context-specific settings . . . where the researcher does not attempt to manipulate" (p. 4). Qualitative design conveys a realistic and natural approach to understand phenomena in a real-world setting (Peters, 2014). Patton (2002) noted qualitative research design as a "real world setting where the researcher does not attempt to manipulate the phenomenon of interest" (p. 39). Straus and Corbin (1990) defined qualitative

research as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (p. 17). Golafshani (2003) and Peters (2014) noted qualitative research generated data findings derived from real-world settings where the "phenomenon of interest unfold naturally" (Patton, 2002, p. 39). The study aimed to gather data from Hurricane Michael survivors to identify previously unknown phenomena as part of understanding the human behaviors in leadership and decision-making.

Open ended narrative interview questions provided as part of exploratory research offered unbiased unrestricted thoughts of community members on the different roles of government through the immediate recovery process and helped identify themes within the context of the survey participants answers (Bass, 1960; Louangrath & Sutanapong, 2018; Scherpenzeel & Saris, 1997). Trochim and Donnelly (2008) contended the flexibility of exploratory research allowed researchers to conduct a robust exploration of the human culture. Crang (2005) suggested the use of exploratory research as the best research method when determining descriptive problems and no other research method seemed appropriate. Lastly, exploratory research is best suited for the study as the understanding of the phenomena is not rigidly defined or understood (Denscombe, 2003; Mainardes, Alves, & Raposo, 2010).

### **Research Questions**

This research involved an examination of opinions and perceptions of the public as related to previously unknown phenomena experienced in the immediate aftermath of a landfalling hurricane, as designed to answer the following research questions:

Q1: What issues warrant consideration by local governments when preparing for a hurricane to make landfall?

Q2: What is the role of the local government in the first 72 hours following a hurricane landfall?

Q3: What does the public view as being the most hazardous situation occurring as a result of a hurricane?

### **Assumptions and Limitations**

The study focused on Hurricane Michael and its impact on Bay County, Florida. Limitations of the study included the lack of accessibility to the individuals directly involved in the decisions made during the immediate recovery of Hurricane Michael (Aizpurua et al., 2016; Yesilada et al. 2015). Survey participants were asked to self-identify if they were: in emergency services or related field, worked in a government office leadership / supervisory role in Bay County Florida or the surrounding area, were under the age of 18 at the time of the hurricane or currently under the age of 18. In the event of an affirmative answer to any of the previously mentioned questions, the survey participants were automatically directed away from the data collection. Survey participants may have pause in self-identifying if they were in leadership positions during Hurricane Michael despite assurances of confidentiality (Dewitt, 2020; Scholz & Lubell, 1998). The geographical area surveyed is prone to hurricanes of all sizes. Survey participants with longevity in the area may harbor skewed opinions as their experiences with past minor hurricanes may influence their opinions about the immediate recovery of Hurricane Michael (Stewart, 2015).

The study assumed the perceptions of the survey participants will adequately expose previously unknown phenomena related to the need of local leadership to provide adequate services in the immediate aftermath of a major hurricane. The study also assumed the survey

participants will articulate their experiences with honesty and truthfulness in their experiences of Hurricane Michael and the immediate recovery. An assumption existed that the analysis and interpretation of all previous researchers having studied the phenomena is true, accurate, and correct. Lastly, the study assumed through the survey process themes will emerge from the responses allowing for categorization of different patterns in the perception of the impacted public.

### **Definition of Key Terms**

*Catastrophic Weather Event.* Encompasses extreme weather events to include hurricanes, tornadoes, droughts, and blizzards, as well as other weather-induced disasters (Randolph, 2015).

*Crisis.* The word crisis is defined by Simola (2005) as a low probability event with a high impact that threatens the viability of loss of property or human life. Porsche (2009) defined crisis as a threat to an individual, family, or community.

*Disaster.* Parker (1992) viewed the term "disaster" as an event either man-made or through an act of God that overburdens the emergency operations of a community in their ability to react and respond to the disastrous situation.

*Emergency Management Personnel.* Emergency management personnel are individuals employed by organizations that provide emergency services to a local community to prepare and recover a disastrous event. The term includes federal, state, sub-state, tribal, territorial, local governments, non-government organizations, and all other governing bodies involved in an emergency response situation (Bearman et. al, 2018).

*First responder.* First responders are the individuals assigned to prevent and protect society against potentially harmful situations created by emergency events (FEMA, 2019b).

*Focused Event.* Birkland (1998) defined the term as an event that is sudden; relatively uncommon and can be potentially cause greater future harms.

*Mitigation.* The term mitigation is used in the scenario of emergency management to describe the measures taken to minimize the risk of destruction of property or loss of human life (FEMA, 2019b).

*National Hurricane Plan (NHP).* The National Hurricane Plan provides assessments and deliver tools to develop and deploy technical assistance to local municipalities and state agencies to prepare the community for the mitigation of disastrous events (FEMA, 2019b).

*Major Hurricane.* The National Hurricane Center defines the term "major hurricane" as a hurricane that has reached maximum sustained surface winds of at least 111 mph. Major hurricanes are the equivalent of a Category 3 or higher on the Saffir-Simpson scale (NOAA, 2021b).

*National Response Framework (NRF).* The National Response Framework (NRF) is a nationally formulated plan that addresses the roles and responsibilities of the various entities involved in the response and recovery process of working through the survivability of the event. The NRF is a living document that provides the scalability and flexibility in its design and structure (FEMA, 2019b).

*Natural Disaster.* An adverse event caused by the natural process of the earth. The definition includes catastrophic weather events such as major storms, hurricanes, tsunamis, floods, tornadoes, volcanic eruptions, and other acts of God (Bankoff et al., 2004).

*Recovery phase.* The recovery phase of emergency management begins as the major hurricane reaches its conclusion over a specific geographical area. The community remains in the recovery phase until normal operations return to the impacted area (Lindell et al., 2007).

*Saffir-Simpson Scale.* The Saffir-Simpson Hurricane Wind Scale is a means to measure the intensity of a hurricane's strength and categorizes the intensity on a scale ranging from 1 – 5 (Taylor et. al, 2010).

*Support Agencies.* Support agencies are those organizations that are not government agencies but operate in the best interest to minimize the suffering of disaster victims. Supporting agencies are often responsible for providing essential services such as food, water, and shelter (FEMA, 2019b).

### **Summary**

Local and state leaders have a duty and responsibility to protect their constituency against the loss of property and life (Ashcroft, 2001) through the phases of hurricane recover. Those in leadership positions face a myriad of options and decisions in the pre-planning of a major hurricane and continued decision-making through the event and the recovery stages (Hoch, 2017; Hurley, 2019; Manning, 2020; Quarantelli, 2000). Effective local and state leadership require close collaboration and communication with federal agencies and non-governmental organizations in the pre-planning for the destruction a major hurricane may inflict on a local community (Curtis, 2015; Garnett & Kouzmin, 2007; Jonkman et al., 2018; Kapucu, 2006; Motavesseli & Hajjialiakbari, 2017; Reynolds, 2010). Leaders at all levels of emergency response must maintain a degree of flexibility in policy implementation to respond efficiently to the immediate needs of an impacted community to reduce the chances of creating compounding



disaster components (Pülzl & Treib, 2007; Sabatier & Mazmanian, 1980; Webb & Chevreau, 2006). Immediate responders must consider the preservation of human life over the protection of personal property in their decision-making while working to maintain peace and order within the community (Cortez, 2020; GAO, 2015; Grinberg, Edwards, & McLean, 2015; Harris et al., 2018; McKenny, 2018; Saunders, 2021). The task local and state officials face in hurricane recovery is monumental and near impossible without the assistance of the federal government (FEMA, 2018).

Research has shown the destructive nature of a major hurricane not only effect the damaged areas where the storm makes landfall, but also has a ripple effect through production markets and financial indices within the nation creating a financial burden affecting all Americans (Feria-Domínguez et al., 2017; Walls, Magliocca, & McConnell, 2018). The issue of hurricane recovery and the importance of collaboration of local and state government with federal agencies became an issue with the landfall of Hurricane Katrina and the disastrous situations that followed in the City of New Orleans (Bava et al., 2010; Birkland & Waterman, 2008; Ernest, Mladenow, & Strauss, 2017; Kapucu, 2008; Kapucu & Garayev, 2013; Pathak, Zhang, & Ganapati, 2020). The nation experienced relatively quiet hurricane seasons for the next 12 years fostering a climate of complacency among the planning community until several major storms made landfall in 2017 (NOAA, 2022c). Hurricanes Harvey, Irma, and Maria brought renewed attention to the subject of disaster recovery as they collectively cost the nation over \$373 billion dollars in damage and over 3,200 lives lost in the 2017 hurricane season (NOAA, 2022a, 2022b; Reguero et al., 2018; USNHC, 2018).

Hurricane recovery experts proclaimed the first 72 hours following a hurricane are the responsibilities of individuals and emergency services may not be able to reach those in need

(Col, 2007; Collier, 2021; Dourandish, Zumel, & Manno, 2007). The increase in population densities along coastal communities push the validity of the 72-hour rule as longer periods of time from responding agencies are required to clear debris, restore infrastructure, and ensure the health and safety of individuals are secure from contamination of food and water in addition to protection from the criminal element (Cook, 2009; NOAA. 2022d; U.S. Census, 2021).

Additionally, those living in rural communities inland of the landfall experienced extend periods of time without the use of electricity as utility companies are concerned with providing electricity to more populated areas first and rural communities secondary (EIA, 2018; Robles, 2018).

The period of immediate recovery is critical to minimize the suffering of hurricane victims and compounding disaster components, yet immediate recovery remain an understudied element of emergency response (Harris, 2018; Holguín-Veras et al., 2014). The public perception of the needs of a community in the immediate hours and days following the landfall of a hurricane serve as the driving force in the design and implementation of policy decision-making (Lindner & Crockcroft, 2013). The exposure of the public perception of the roles of the local, state, and federal government in the immediate needs of a community following a major hurricane provided a foundation for the planning community to expand upon the research to assist local leaders in effective decision-making and to bring modern resources to bear that may assist in the recovery process, thereby saving lives and protecting property (Cohen, 2019; Demiroz & Kapucu, 2012; FEMA, 2018; Harris et al., 2018).



## **Chapter 2 – Literature Review**

### **Overview**

Curtis (2015) and Webb & Chevreau (2006) suggested responsible decision-making in the preparation and immediate recovery from a major hurricane required flexibility in policy implementation and close collaboration and coordination among responding agencies to minimize the suffering of hurricane victims. The Associated Press (2014) reported the American public had little faith in the abilities of their elected leaders and are deeply cynical about government and their ability to provide effective leadership during daily business. Americans had much less confidence and trust in their local leaders and their ability to lead during a catastrophic event (Nicholls & Picou, 2013). The goal of this qualitative research is the exploration of the perceptions and opinions of citizens of Bay County, FL to identify previously unknown phenomena connected to their experiences in the aftermath of Hurricane Michael.

In the following literature review, an overview of the issues involved with the theoretical framework, 2017 hurricane season, absence of focus on immediate recovery literature, policy implementation, community resilience, leadership, and collaborative planning are presented for review. In addition, the involvement of the Federal Emergency Management Agency (FEMA) and crisis preparedness have been discussed.

### **Theoretical Framework**

Dourandish, Zumel, and Manno, M. (2007) argued the National Response Plan (NPR) does not adequately address the needs of a community in the first 72 hours after the landfall of a major hurricane. “The first 72 hours of a disaster are the most crucial period in a major disaster response” (Dourandish et al. 2007, p. 3). Hurricane survivors can expect to be on their own

during these first 72 hours or longer (Batten, 2019; Collier, 2022; Kohn et al., 2012) with limited to no assistance from any government agency. Data collected during the recovery of Hurricane Katrina revealed an eventual influx of over 70,000 emergency operation personnel (Waugh, 2007) deployed to assist in the recovery efforts. Responding personnel on the ground in New Orleans during the first three days after the landfall of Hurricane Katrina only accounted for 16% of the responding emergency personnel (Dourandish et al., 2007). Hurricane Harvey brought over 31,000 individuals to respond to the needs of Texans impacted by the storm (Cortez, 2020; FEMA, 2017). Hurricane Michael witnessed a smaller number of first responders with only 16,000 individuals responding to the recovery efforts (DHS, 2018). Immediate responders responding to both Hurricane Harvey and Hurricane Michael came from the city's local resources and emergency personnel with no state or federal assistance on the ground at the time of the events (Grinberg, Edwards, & McLean, 2015; McKenny, 2018; Saunders et al., 2021).

Puerto Rico experienced more profound issues in the recovery process after the landfall of Hurricane Maria. Moore (2018) questioned the federal government's lack of commitment to assist Puerto Rico in recovery efforts as Puerto Ricco had experienced Hurricane Irma just two weeks prior to Hurricane Maria. Moore (2018) argued emergency operations personnel should have already been in place to assist the community through recovery before the landfall of Hurricane Maria. Harris et al. (2018) provided an examination of immediate responders in the aftermath of Hurricane Harvey and concluded the federal government provided insufficient support in the immediate days after the event leading to more compounding disaster components. The research provided in this study aimed to expose the public perception of the leadership decisions in the preparation and protection of its citizens in the aftermath of a major hurricane.

The infrequency of major hurricanes combined with the frequent changes in governmental leadership made the study of the challenges of decision-making in the immediate days after a major hurricane a complex issue (Grambling, 2021; Hurley, 2019; Knutson et al., 2008; Yan et al., 2017). Local leadership becomes overwhelmed by the chaos created by a major hurricane and unknown disaster compounding components, which generate the necessity for flexibility in the implementation of emergency management policies (Naim & Montgomery, 2006; Webb & Chevreau, 2006). Collaboration between local, state, and federal agencies required an understanding of the shifting roles of governmental responsibilities when working with supporting agencies through crisis management (Col, 2007; Harris et al., 2018; Kapucu et al., 2009; Smith, Sabbag, & Rohmer, 2018). Naim and Montgomery (2006) and Smith et al. (2018) maintained administration at all levels must be willing to set aside disputes of territorial roles and maintain flexible arrangements among varied supporting agencies when addressing the needs of a community that has suffered through a natural disaster.

Collaboration among multiple supporting agencies in a disaster scenario can either assist in the recovery process or create additional problems for the victims (Liu & Huang, 2014; Rogers et al., 2018; Vail, 2007). Naim and Montgomery (2006) examined the hurricanes of the 2004 season that made landfall in Florida and observed a lack of clear guidance existed in the stratification of government services resulting in overlapping responsibilities, thereby creating confusion among local officials when determining avenues of disaster relief. Researchers have commonly recognized the lack of collaboration with responding organizations prior to a major hurricane increased the probably of creating compounding disaster components in the aftermath of the storm and intensified difficulties in recovery efforts (Baker, 2011; Basolo et al., 2009;

McEntire & Myers, 2011; Renda-Tanali, 2020; Wang & Paul, 2020), creating additional unnecessary suffering for the disaster victims.

Emergency management networks throughout the recovery process provided support to ensure the minimization of future victimization of hurricane survivors (Drabek & McEntire, 2002; Kapucu & Garayev, 2013). Emergency management operations required collaborative management within the framework of the response and recovery efforts of a major hurricane to ensure the delivery of the most effective services to the impacted area (Birkland, 2007; Kapucu, 2006, 2008; 2012; Ward & Wamsley, 2007). Government agencies, business entities, and non-government organizations must work in cooperation and collaboration with each other as part of the pre-storm preparations to assist a community in recovery process (Cote, 2017; Hurley, 2019; Koliba et al., 2011).

Waugh and Streib (2006) theorized the need for collaboration between all levels of supporting agencies as made apparent by their statement supporting a consensual process of pre-storm collaboration. Waugh and Streib (2006) wrote, “Collaboration is a necessary foundation for dealing with both natural and technological hazards and disasters” (p. 131). FEMA recognized the “Whole Community” concept of collaborative networking as a necessary component of emergency management operations, thereby supporting the need of federal government in all phases of emergency planning and policies (Doyle, 2019; FEMA, 2011; FEMA, 2019b). Edwards (2013) theorized the philosophical approach of collaborative networking necessitated engagement of multiple organizations within the community. The “Whole Community” concept involved interaction and input from citizens, private and nonprofit organizations, community officials, and business executives, in addition to the entirety of all the government leadership (Edwards, 2013; FEMA, 2011; FEMA, 2019b; Han et al., 2012).

Pathak et al. (2020), Kapucu and Van Wart (2011), and Waugh & Streib (2006) noted community stakeholders play a vital role in the immediate hours and days following a major hurricane by meeting collectively and collaboratively prior to the storm to develop a plan for the response and recovery. Partnerships between community support groups and government agencies in mitigation preparation help identify the extent to which local communities can respond in the event of a major hurricane and what resources to request from state and federal authorities (FEMA, 2011; FEMA, 2019b). Kapucu (2012) maintained the best use of the Whole Community concept occurred during pre-storm preparations and attempting to use the Whole Community concept in the aftermath of a major hurricane will add to the chaos of the situation.

The terrorist attacks of September 11, 2001 brought a new focus to the role of decision-making in all phases of disastrous management (Marshall et al., 2003). Danczyk (2008) conducted studies in governmental administration in times of a natural disaster and concluded good emergency management policies are inclusive of skills traditionally acquired in non-emergency situations. Danczyk's (2008) observed the need for continual education of elected officials in emergency management preparation and recovery as people in these positions change frequently. The process of supporting a community through all phases of a major hurricane required officials to translate and effectively communicate to bring policy intentions into reality (Curtis, 2015; Ernest et al. 2017; Garnett & Kouzmin, 2007; Kapucu, 2006). A failure to communicate effectively across supporting agencies in the recovery phase following a major hurricane create difficulties for those who have survived the event (Bennis, 2000; Reynolds, 2010; Whitehead, 2005).



### **Hurricane Season 2017**

The 2017 hurricane season represented a critical year in the exploration of hurricane recovery. Weinkle et al. (2018) categorized the 2017 hurricane season as a historic season as the United States experienced the landfall of three Category 4 hurricanes for the first time since modern recording of hurricane data. Potter (2019) reported the Category 4 hurricanes Harvey and Irma made landfall only two weeks apart from each other with Hurricane Maria striking Puerto Rico a week later as a strong Category 4 hurricane. These storms were the first opportunity federal and governing officials had an opportunity to implement and examine their pre-hurricane plans in a real-world situation since the 2012 Superstorm Sandy.

Hurricane Harvey made landfall near Rockport in the southern region of Texas commonly known as the Coastal Bend. Hurricane Harvey came ashore with sustained winds of 130 mph making it a Category 4 hurricane. Harvey became the first hurricane to make landfall within the region since 1961 with the landfall of Hurricane Carla (NOAA, 2021). Hurricane Irma made came ashore in the Florida Keys and then headed north along the westward coastline with the eye of the hurricane remaining offshore until its dissipation over North Florida and Southern Georgia before moving into the Atlantic as a tropical storm. The west coast of Florida received sustained winds with Category 3 intensity with the majority of damage confined to the mid and southernmost Keys. The two storms created widespread devastation along the Atlantic Coastline and the Gulf of Mexico with severe damage occurring in the rural areas of Aransas County, Texas and Monroe County, Florida.

Similar to Hurricane Michael, Hurricane Harvey intensified in strength once it reached the warm waters of the Gulf of Mexico. Harvey traveled through the Bay of Campeche and then turned north toward Texas where it developed into a Category 4 hurricane (Blake & Zelinsky,

2018). Camp et al. (2018) and Murphy (2017) noted the rapid intensification of Hurricane Harvey made predictability of the storm's path and the potential destruction nearly impossible for forecasters to predict until two days before landfall. According to the National Oceanic and Atmospheric Administration (2021), Harvey brought gusts of wind of 134 mph and storm surge reaching heights of 12 feet. The rural county of Aransas, Texas, experienced sustained winds of 106 mph and a storm surge averaged at 3.04 feet. Hurricane Harvey made landfall on August 25, 2017 with wind speed intensity substantially weakening to tropical storm status once over land (NOAA, 2021). Harvey subsequently stalled over southeastern Texas for another week producing over 60 inches of rainfall in the Houston metropolitan area. Officials of the City of Rockport and its neighboring town of Fulton in Aransas County ordered a mandatory evacuation. An estimated 560,000 people in the Coastal Bend region evacuated. In total, some 3.8 million Texas residents evacuated, the vast majority of whom from Houston in anticipation of flooding (FEMA, 2019a). Hurricane Harvey claimed a total of 68 direct deaths in the United States, all of which were in Texas, and another 35 indirect deaths (Blake & Zelinsky, 2018).

NOAA (2021) reported Hurricane Irma made landfall on August 30, 2017 as a Category 4 hurricane impacting the Florida Keys just two weeks after the landfall of Hurricane Harvey in Texas. The eye of Hurricane Irma passed Cudjoe Key in the Lower Keys and then moved northward along western Florida with Category 3 intensity. During its landfall in Monroe County, Florida, Irma generated 132 mph sustained winds, with an average wind speed of 110 mph. Storm surge was as high as 8 feet in some locations of the Florida Keys, with an average level of 3.05 feet (NOAA, 2021).

Pre-storm preparations for Hurricane Irma included coordination with electrical companies to restore power expediently, stockpiling fuel reserves for emergency equipment, and

the staging of emergency response equipment such as earth movers to be deployed rapidly in response to the damage created by Hurricane Irma (Floridadisaster.org, 2017). All toll roads within the state suspended the collection of tolls, including the Florida Turnpike, for the time-period where Hurricane Irma moved up through Florida. Governor Scott issued executive orders closing all state offices in Florida from September 8 to September 11 as the storm continued its tract the peninsula of Florida. The Governor subsequently ordered the closure of public schools and state universities for the duration of Hurricane Irma (Floridadisaster.org, 2017). The Governor then ordered the opening of almost 700 emergency shelters with the capability of housing nearly 200,000 people (Florida, 2018) as precautionary measures to house those made homeless from the storm. Over 40% of the emergency shelters were located in South Florida (Floridadisaster.org, 2017).

Over six million Florida residents evacuated ahead of Irma in response to the governor's evacuation order (FEMA, 2018). In the Keys, all residents and visitors were subject to mandatory evacuation orders. About 75% of residents across those islands in Florida evacuated before Irma's landfall (FEMA, 2018). In Florida, Irma caused 47 direct deaths and an additional 82 indirect deaths. In the Florida Keys, three people drowned during Irma's passage (FEMA, 2018).

Puerto Rico sustained devastating damage from Hurricane Maria. Hurricane Maria made landfall on the island of Puerto Rico on September 20, 2017 near the town on Yabucoa (Kwasinski et al., 2019). Hurricane Maria maintained windspeeds of 155 mph making the storm a very strong Category 4 hurricane, just 2 mph less than the level for the maximum category of five. Residents residing in rural parts of the island experienced lengthy delays in recovery as they had no access to immediate responders. Large parts of the island were isolated from any

assistance for long periods of time due to widespread flooding and landslides that destroyed roads and bridges. The collapse of an already weak energy grid and destruction of communication networks also contributed to the delay in immediate recovery efforts (Nunez-Neto et al., 2020; Zorilla, 2017). Hurricane Maria displaced thousands of families as the destruction of available housing stocks severely limited areas for hurricane refugees to seek shelter. Response efforts in many cases took days and weeks to reach far flung communities.

NOAA (2021) noted the exact death count contributed to Hurricane Maria is highly uncertain due to the obsolete methods of determination of deaths reported on death certificates. FEMA attributed 65 deaths directly related to the landfall of Maria with uncertainty to the number of deaths indirectly related to the storm (Blake, 2018). Puerto Rico, in collaboration with George Washington University, reviewed deaths certificates issued between September 2017 and February 2018. In August 2019, the Puerto Rican government released an official update of mortality estimates. The official indirect death count contributed to Hurricane Maria totaled 2,975 people (Baldwin & Begnaud, 2018).

*Figure 1. Mortalities per Hurricane*

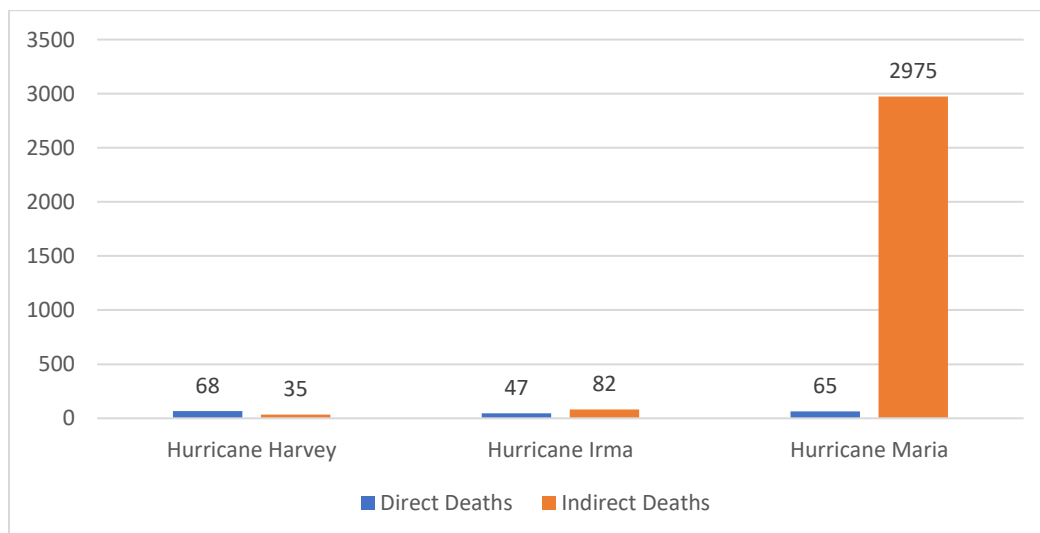


Figure 1, above, compares the mortality rates contributed to the three major hurricanes that impacted the United States during the 2017 hurricane season. Each hurricane represented different preparation needs as the area of the storm's impact are uniquely different from each other. Hurricane Harvey made landfall in rural Texas and stalled out creating flooding situations over vast areas of the southern regions of the state. Hurricane Irma came through the Florida Straits severely damaging the southern and mid Keys before moving northerly through the peninsula of Florida affecting millions of Floridians. Hurricane Maria made landfall on the Island of Puerto Rico as a near Category 5 hurricane destroying homes and businesses. Evacuation for the majority of the Puerto Rican people was not an option and the crumbling infrastructure of the island was unable to withstand the forces of the hurricane resulting in hardships for the Puerto Rican people including tremendous loss of life.

### **Absence of Focus on Immediate Recovery Literature**

The subject of decision-making during the immediate recovery phase of a major hurricane is an exceptionally important subject that receives little attention and understudied by the academic community (Bowser. 2015; Holguín-Veras et al, 2014; Koslov, et al., 2021). Altay and Narayanan (2020) argued existing literature is scarce on several aspects of emergency management recovery and the level of government involvement necessary to guide the disaster survivors first to civility and then back to normalcy. Alhazmi and Malaiya (2012) and Hardy, Roper, and Kennedy (2009) noted existing literature is void of the identification of alternative methods for government involvement considered to provide for the safety and security of disaster victims. Altay and Narayanan (2020) and Lee (2021) examined the potential role of federal government as the leading government agency in the immediate recovery of a community and concluded a need for an increase federal presence existed during Hurricanes Irma and

Harvey, yet other academic discussion of the need of federal assistance in hurricane recovery appeared to be minimal to non-existent.

Government officials administer to the will of the constituency they represent and govern daily to satisfy the community needs (Basolo et al., 2009; Demiroz & Kapucu, 2012). Officials place hurricane preparation on a lower priority of planning as the infrequency of a major hurricane provide a false sense of security and timing (Garcia-Lopez, 2018; Grambling, 2021; Knutson et al., 2008; Yan, Zhang, & Knutson, 2017). The lack of academic studies on the immediate recovery issues contribute to the complacency of officials in preparing a community for the inevitable disaster (Frank, 2019; Frodeman, 2013; Grambling, 2021). Interest in the study of hurricane recovery remain idle until the natural disaster strikes, and assuredly, academic activities resurrect with calls for more studies in how the nation responds to a major hurricane impacting metropolitan areas and accountability for such actions abound (Frodeman, 2013; Rubin, 2009; Yabe et al., 2021). The cycle then repeats itself until the next disaster occurs (Lucie, 2016).

### **Policy Implementation: A Generational Approach**

Identification of malfunctions in policy planning led to the failure of policy implementation, sparking planning scholars to reengineer and rethink policy planning theory wholistically (Altschuler, 1965; Derthick, 1972; Perloff, 1966). Prince (1920) focused academics on the study of emergency management as part of sociological research as part of the human experience. Emergency management policy as part of the Public Administration discipline did not come to the forefront of academic investigation until the mid-20<sup>th</sup> century when local and state leaders called for reform of the way the federal government assisted local communities through disaster recovery (Comfort, Waugh, & Cigler, 2012).

Altschuler (1965), Derthick (1972), and Perloff (1966) changed the approach of federal emergency management when they argued policy implementation as a separate and subfield of policy. Gittell (1992) concluded studies focused on policy design as related to implementation. President Lyndon Johnson opened new avenues of research requiring planners to address the gap between policy promises and physical results through his Great Society initiatives (Clement, 2018). Communicative Planning addressed the issues of the involvement of politics as part of the communicative process but relied heavily on the fundamental foundations of the communicative ideology (Motavesseli, M., & Hajialiakbari, 2017). Pragmatic Planning theory provided the most realistic attempt to link politics and planning implementation as it acknowledged the plurality of the needs of society (Hoch, 2017; Willis & Lake, 2020).

Goggin (1986) identified three distinct generations of implementation in a study of policy design. First generation studies of policy implementation detailed accounts of how a single authoritarian decision carried out at a single location then spread to multiple locations (Derthick, 1970). Goggin (1986) asserted first generation policy implementation as a complex and dynamic process where a single decision will have impacts on a variety of participants. First generation researchers doubted the ability of government to successfully implement any policy change (Goggin, 1986). Eugene Bardach (1977, p. 593) observed that "even the most robust policy - one that is well designed to survive the implementation process - will tend to go awry".

Hill and Hupe (2002) described the first generation of policy implementation literature as being "pessimistic" case studies focused on the failure of policy and planning. Hill & Hupe (2002) and Pölzl & Treib (2007) contended research into policy implementation prior to 1970 remained fragmented and went by a myriad of other names as well as examination by other disciplines. In earlier years, Derthick (1972) and Pressman & Wildavsky (1973) created a

starting point for planning and policy implementation as part of the public administration discipline commonly referenced by the academic community.

The second generation of implementation literature focused on the theorization of ‘top-down’ and ‘bottom-up’ approaches to implementation (Goggin, 1986). Pülzl & Treib (2007) listed “top-down” scholars as Van Meter and Van Horn (1975), Bardach (1977), Nakamura & Smallwood (1980), and Sabatier and Mazmanian (1980). These scholars argued the “top-down” approach as the most efficient as policy decision-making originated from the upper levels of the hierarchical organization and others should follow the leader’s decisions. Pülzl & Treib (2007) contrasted this with the “bottom-up” scholars, which include Ingram (1977), Elmore (1979), and Hjern and Hull (1982). Bottom-up scholar’s viewed street level bureaucrats and citizens as the driving force in the development and implementation of public policy (Ingram, 1977; Elmore, 1979; Hull, 1982).

The federal government’s involvement with Hurricanes Katrina and Superstorm Sandy provided supporters of a “top-down” approach evidence of the need of big government to manage large scale emergencies (Dehaven, 2012; Pareja, 2019). Opponents to the “top-down” theory of leadership argued federal government is too large and cannot react timely to adequately support the needs of hurricane victims (Birkman & Waterman, 2008; Carfano & Mayer, 2007). Failure to provide for a community in the immediate aftermath of a major hurricane can create additional problems for hurricane survivors by compounding disaster components (Liu & Huang, 2014; Vail, 2007).

The federal government's inability to appropriately respond to the devastation created by Hurricane Katrina provided clear evidence that a top-down approach to disaster relief is fundamentally flawed (DeHaven, 2012). Federal agencies were unprepared for the aftermath of



destruction caused by Hurricane Katrina which led to agencies trying to do too much which resulted in doing a lot of things poorly (Birkman & Waterman, 2008; DeHaven, 2012; Raine & Perrin, 2019). Promoters of the top-down approach reasoned an individual state cannot provide the financial support to solely handle the recovery challenges created by major hurricanes (DeHaven, 2012). The leadership efforts of the federal government suffer from decades of excessive policy design creating complexities to effectively manage the distribution of relief supplies (Birkland & Waterman, 2008). State and local officials are closest to those affected by a catastrophic weather event and thus better appreciate the needs of their communities (Col, 2007; Henstra, 2010; Manning, 2020).

The third and latest generation of literature focused on policy implementation provided the mantra of “doing more with less” developed during the Ronald Reagan and George Bush administrations (Dehaven, 2012). This new generation of literature attempted to bridge the gap between the “top-down” and “bottom-up” approaches by creating new theories that Hill and Hupe (2002) referred to as the “synthesizing” generation, echoing the sentiments of Goggin (1990) from years earlier. Goggin (1986) argued a lack of literature referring to policy implementation necessitated an increased need in the study of comparative policy case studies and means to test the theories involved. Fixen et al. (2005) supported Goggin’s writing by stressing there are no agreed upon set of terms available to researchers and fewer organized approaches to execution and evaluation of policy implementation, practices, and outcomes.

Effective policy implementation using the third generation of synthesizing information to “do more with less” is counterintuitive to the mission of providing immediate relief to hurricane survivors (Manning, 2020). Government officials can forecast the severity and potential damage caused by a major hurricane prior to making landfall (Bostrom et al., 2018). The pre-storm

forecasts allow a window for government officials to prepare for the possible devastation prior to the storm's arrival (Bostrom et al., 2018; Watts et al., 2019). Adaptation of the third-generation theory of thought toward emergency management applied to the immediate recovery efforts after a major hurricane is weak as a budget driven initiatives are effective for daily business and not so applicable to emergency management as recovery cost are unknown (Wang, 2020).

### **Community Resilience and Critical Juncture Approach**

The immediate recovery of a community experiencing a major hurricane must concentrate on short-term outcomes with respect to repairing infrastructure damages and emergency relief activities (Birkman et al 2010., Blackman et al. 2017; Koebele et al., 2020). Research expectations have evolved to include the necessity of fundamentally changing the methodology of measuring recovery to capture developments in emergency management and community resilience (Wilson, 2014). Community resilience in hurricane recovery has brought new focus to the need of immediate recovery of a disaster (Birkland, 2006; Tierney & Oliver-Smith, 2012). Capoccia and Kelemen (2007) argued the Critical Juncture Approach (CJA) postulated a model of institutional development interrupted periodically by brief periods of institutional flux - referred to as critical juncture.

CJA accounts for a degree of causal force necessary to see a person through a specific aspect of the recovery process (Capoccia, 2015). The timing of the impact of a major hurricane and sequences of disaster components to follow shape the decision-making response of the first responder previously scripted by disaster recovery policy planning (Fioretos et al., 2016). Stark (2018) and Birkland (2006) theorized most researchers of CJA recognized the temporal dimension for which the situation necessitates, yet they lack the analytical clarity to formulate strategies for the long-term dynamics as provided through the Critical Juncture Approach

(Birkland, 2006; Stark, 2018). Other researchers have called for additional consideration of the institutional dimensions as part of the immediate disaster recovery process (Smith et al., 2018). Smith et al. (2018), Capoccia et al. (2007) and Collier & Munck (2017) asserted a lack of consideration explicitly focused on institutions as central components of analysis of the immediate disaster recovery process hindered planning for the immediate needs of hurricane victims. CJA influences institutional change through the immediate recovery process of a major hurricane by providing clarity to the necessary course of action required for the immediate recovery efforts (Collier & Munck, 2017).

### **Leaders Versus Managers During Disaster Recovery**

The use of the term leadership and management are similar and used sometimes interchangeably and erroneously but are of distinct difference. No acceptance of one singular definition of leadership exists by the academic community (Jackson et al., 2015). The ambiguity in acceptance of the terms warrants a brief review of the definitions of each as used in the context of recovery from a major hurricane.

President Carter issued consecutive executive orders in 1979 creating the Federal Emergency Management Agency (FEMA) providing legal authority to the agency to consolidate the fragmentation of federal emergency services (Lucie, 2016). The personnel recruited into FEMA consisted of emergency management professionals from multiple governmental agencies (Bea, 2002). The expansion of FEMA as part of the Department of Homeland Security stimulated the group to seek a model of emergency management (Comfort et al., 2012). The model of emergency management developed by FEMA gave rise to new models of leadership, emergency management, and social science research (Etkin & Timmerman, 2013; Han et al., 2012).

Academic scholars from various disciplines have created over 350 definitions of leadership (Cote, 2017). Scholars are unable to agree upon a clear singular definition of what defines a leader from non-leaders or even managers (Azad et al., 2017). Jackson et al. (2015) suggested an individual's own identity and lived experiences define their perception of leadership and management. Dimmock (1999) provided a distinction between leadership and management by sharing Cuban's (1988) ideology linking leadership to change. Management remained a maintenance activity used to achieve the goals and objectives of the leader (Dimmock, 1999). Cuban (1988) and Dimmock (1999) argued leadership means to influence others to achieve an identifiable goal within an organization. Effective leadership required ingenuity, energy, and skills to shape and motivate the actions of others (Cuban, 1988; Dimmock, 1999).

Maintaining the goals of the organizational mission are the duties of the manager while providing visions of future operations befits the role of leadership (Yukl, 2012). Yukl (2012) supported Cuban's (1988) and Dimmock's (1999) versions of leadership but expanded on the definition of management. Yukl (2012) viewed the role of management as one to provide a stable, consistent, and orderly environment for others to perform their job duties. At the same time, the leader's function remained as the visionary for the organization to maintain pace with changing community standards (Yukl, 2012). Both leadership and management deliver critical services to the recovery process of a major hurricane as the event dictates changes based on the needs of the survivors (Boin et al., 2010). The importance of management rivals the importance of leadership in a post-disaster scenario as each has distinctively different roles supporting the mission of recovery (Jackson et al., 2015).

The successful combination of leadership and management for emergency situations determines the level of success in bringing a community back to civility and then normalcy after a major hurricane (Kapucu, 2008). Waugh & Streib (2006) argued leadership in the preparation of a major hurricane required prior collaboration with all stakeholders within a set community to develop an emergency management plan including federal, state, and local agencies. Rogers et al. (2018) noted management of disaster recovery required the proper execution of preparatory plans prior to the landfall of and through the recovery stages.

Emergency management in a post hurricane environment necessitates leadership to be able to assess and rapidly adjust to the unsuspected events that will inevitably occur (Khalid & Yousaf, 2020; Sommers & Svara, 2009; Tomiczek et al., 2020). A leader must be articulate and confident in their ability to make hard decisions while maintaining an atmosphere of coordination, cooperation, and willingness to interact with all involved in the management of the crisis (Grossman, 2020). Kapucu and Van Wart (2006) argued effective leadership required an elevated level of coordination among different responders with private enterprise, nonprofits, and government agencies at all levels of support.

### **Collaborative Planning for Immediate Recovery**

Birkland and Waterman (2008) studied the problems that plagued the City of New Orleans in responding to the devastation created by Hurricane Katrina. Birkland and Waterman (2008) concluded a lack of agreement of intergovernmental actions between federal and state agencies were largely to blame for the slow recovery efforts (Pierre & Stephenson, 2008; Schneider, 2005; Waugh, 2007). FEMA, as a responding agency, lacked clear guidance and authority to effectively lead the recovery efforts leaving other responding agencies questioning whose lead to follow delaying the immediate emergency response to the area and exponentially

creating unnecessary compounding disaster components (Anada, 2008; Birkman & Waterman, 2008; Boin et al., 2010; Maestas et al.; 2008; Menzel, 2006).

Birkman and Waterman (2008) offered an explanation for the failure in New Orleans in the days following Hurricane Katrina attributing the delay in response to the classic conflict observed whenever conditions require government agencies to work in concert with each other: a conflict between federal and state goals. Birkland and Waterman (2008) contended the failures in New Orleans resulted from mixed mission requirements of FEMA officials. Cohen (2019) and Dehaven (2012) asserted FEMA leaders attempted to stay focused on their newly formed mission of providing domestic security to prevent terrorism and less attention given to disaster management's preparation and recovery process. Local emergency managers provided comprehensive leadership by taking the "all-hazards" approach much more seriously than their federal government counterparts (FEMA, 2011; Gillies, 2006; Morris, 2006). Birkland and Waterman (2008) labeled the federal government's actions as “neither orthogonal to nor congruent with state and local goals” (p. 706).

The diversity and complexity of the multiple areas of expertise that form the disaster response profession hindered the communication and information process across intergovernmental agencies (Rojek & Smith, 2007). Richardson (2006) argued the field of emergency management consisted of different disaster response disciplines containing their own method and means of communication and ways to disseminate information. Effective intergovernmental communication and an agency's ability to coordinate its efforts in the management of disastrous events assist local officials in bringing immediate relief to hurricane impacted communities (Drabek & McEntire, 2002; Quarantelli, 2000).

Olejarski & Garnett (2010) reasoned federal initiatives providing guidance and assistance to individual states and local communities in the assistance of the recovery process of a major hurricane remained largely ignored until the 2005 landfall of Hurricane Katrina. The U.S. Congress recognized the failures in the federal response (Senate, 2006) and responded by passing the Post-Katrina Emergency Management Reform Act (PKEMRA) of 2006 (Cigler, 2009). PKEMRA retained FEMA within the structure of the Department of Homeland Security but made far reaching alterations to FEMA's organizational and management structure (Cigler, 2009). The Act provided legal authority for a restructuring of FEMA to serve disaster victims better by calling for over 300 changes in federal emergency management (Congress, 2006).

Literature produced in the days and years after Hurricane Katrina placed the blame of the Hurricane Katrina leadership calamity within the purview of FEMA (Birkland & Waterman, 2008; Buxton et al., 2017; Cohen, 2019; DeHaven, 2012; Pierre & Stephenson, 2008; Reid, 2013). The nation experienced relatively few major hurricanes for the following years allowing the subject of recovery to fall from the minds of government leaders (Lucie, 2016; Rubin, 2009; Yabe et al., 2021). The nation experienced a record-breaking hurricane season in 2017 exposing the shortcomings in the capabilities of FEMA to provide effective recovery assistance (Smith, 2017). Congress reacted by enacting the Disaster Recovery Reform Act of 2018 which reaffirmed the federal government's commitment to providing increased support to local communities through investments in the development of the capabilities of sub-government entities to deal with catastrophic events (Rouhanizadeh et. al, 2020; FEMA, 2021). The Disaster Recovery Reform Act of 2018 identified the duties and responsibilities of various government entities in an attempt to limit the confusion and overlapping of duties (Schroeder, 2019).

Claire Rubin (2009) acknowledged the lack of studies in the post-recovery periods of disasters had fostered a climate of complacency in the field that had evolved over 25 years. Disaster recovery is a slow process that may stretch for many years after the passage of the focused event (Birkland, 1997). The economic impact of a major hurricane slows the growth of the area and may span the course of decades (Wang & Paul, 2020). Clear identification of the responsible leadership of governmental entities and collaboration among these agencies through the recovery phase of a disastrous event would minimize confusion among local leaders and assist individuals in their short-term needs (FEMA, 2019b).

Kapucu (2008) maintained the management of disaster recovery in both routine crises and major catastrophes required collaborative leadership from all levels of support to include local, state, and federal officials. Government officials require a wide array of management competencies to sort through and operate within the framework of the recovery process (Yukl, 2012). McEntire and Dawson (2007) expressed the collaborative aim of leadership in emergency management as singular unifying object "...to implement programs that will reduce vulnerability, limit the loss of life and property, protect the environment, and improve multi-organizational coordination in disasters" (Demiroz & Kapucu, 2012, 92).

The public place great trust in their government in times of disaster to manage projects to rebuild the community's infrastructure, return civility to the area, return government services to normal operations, and protect the vulnerable citizenry from further victimization (Cutter et al., 2013). Major hurricanes stretch the capabilities of those in leadership positions to respond quickly, confidently, and with good judgment to the uncertainties evolving from the crises (Cote, 2017; Demiroz & Kapucu, 2012). Leaders involved in bringing the community back to normal standards require competency and talent to be able to lead the public through a disastrous event



based on the organizational mission for which they lead and the intensity and scope of the disaster (Demiroz & Kapucu, 2012; Prewitt et al., 2011).

Local and state leaders have the ability to manage small or day-to-day emergencies without outside assistance (Edwards, 2013; FEMA, 2011). Moderate-sized threats require local and state leaders the need to consider relinquishing a degree of control and request aid in the form of federal assistance to provide safety and security services for disaster victims (Doyle, 2019; Ernest et al., 2017). Local administrators and elected officials become overwhelmed by the degree of work required in the recovery process of events created by a major hurricane (Kapucu, 2018). While the recovery from small to mid-sized disasters is predictable and manageable by local and state officials, the uncertainty of catastrophic events requires the assistance of the federal government and close cooperation and collaboration at all levels of government (Kapucu & Van Wart, 2006). Prior planning and collaboration between local and state emergency personnel will minimize the degree of complexity required in the recovery process and reduce compounding disaster components (Liu & Huang, 2014).

Non-governmental organizations (NGO) in the form of churches, charities, and businesses can fill a void in the recovery process by providing living necessities to sustain life during the immediate aftermath of a disastrous event (Curtis, 2018). Local government preplanning of disaster should collaboratively include the management of the NGOs as part of the recovery process (Garnett & Kouzmin, 2007). The lack of collaborative pre-planning, coordination, and communication efforts between government agencies and NGOs contribute to the failures to provide adequate emergency services immediately following a catastrophic event (Curtis, 2015; Kahn & Barondess, 2008).

NGOs are a critical component of the immediate disaster recovery response as they can help meet the immediate needs of those affected by the catastrophic event by providing survivors with necessities such as food, clothing, and shelter (Zakour & Gillespie, 1998). NGOs also provide critical services not traditionally provided by governmental services, such as meeting the mental and physical health needs that may arise as a result of the event (Kahn & Barondess, 2008). Eikenberry et al. (2007) suggested pre-planning of immediate recovery of major hurricane must also consider the involvement of nonprofit and NGO response to disasters and plan accordingly.

### **Involvement of Federal Emergency Management (FEMA)**

Coordination of disaster mitigation and recovery efforts with local and state agencies became the responsibility of FEMA at the organization's inception (Mushkatel & Weschler, 1985). Joint coordination between the state and local governments with FEMA theoretically began when local and state resources become depleted, requiring states to request additional federal governmental assistance (Biedrzycki & Koltun, 2012). The organizational model originally adopted by FEMA was fraught with confusion both internal to the organization and outwardly to those they support (Bea, 2002).

The inadequacies of the leadership structure of FEMA became apparent in 2005 with the landfall of Hurricane Katrina along the Northern Gulf Coast of the United States (Buxton et al., 2017, Daniels, 2007, Starks, 2006; Waugh, 2019). FEMA had been through two decades of restructuring government disaster services and found itself again restructured after the terrorist events of September 11, 2001 (Gardner, 2009; Waugh, 2019). FEMA struggled to find its place among a national bureaucracy as a legitimate organization when it found itself under reorganization again in 2003. New presidential leadership downgraded FEMA from an agency to

a directorate within the Department of Homeland Security in 2003, making the agency a much smaller part of a larger organization (Schneider, 2005).

The nation's entire emergency management system shifted its focus away from assistance to states and local communities in the recovery of natural disasters and directed their efforts toward the development of localized antiterrorism capabilities (Schneider, 2005). Joe Allbaugh, the agency's then director, clearly articulated FEMA's intentions on reducing the federal governments involvement in disaster mitigation and driving the federal government's attention on localized efforts on counterterrorism (Carafano, 2007). Allbaugh referred to federal disaster assistance as an "oversized entitlement program" and suggested hurricane victims rely on "faith-based organizations" rather than turning to the federal government for assistance (Lipton & Shane, 2005, A17). Public statements made by the agency's then director created ambiguity regarding FEMA's overall mission and confusion among local governmental leaders in the role of FEMA as it concerned disaster mitigation (Schneider, 2005). Roberts (2006) observed FEMA as a political center of bureaucratic infighting as the consolidation of services gave rise to conflicts between departments and split the cohesiveness across the organization. FEMA once had a clear focus on consolidation of governmental disaster services and recovery of communities in the aftermath of a catastrophic event now faced a bifurcated set of objectives that complicate and hinder hurricane recovery (Schneider, 2005).

Ernest (2017) maintained the consolidation of public amenities to provide immediate recovery services after a major hurricane required close collaboration among government entities to be effective. Zikic et al. (2012) provided a description of collaborative strategies as a dependence on cooperation amidst all parties to achieve objectives of all involved. Zikic et al. (2012) further explained alternative solutions to shared problems become apparent through

mutual respect that can effectively solve multiple problems. Collaboration becomes effective when the parties involved in the decision-making have a mutual concern for themselves and for others (De Dreu et al., 2001).

De Dreu et al. (2001) suggested collaboration amidst supporting agencies required the process of cooperation and exchanging information regarding the preferences and immediate concern of the interested parties to identify a balance of importance between what matters and issues of less importance. A collaborative strategy during Hurricane Katrina would have aligned FEMA's actions with the interest of the public (Bava et al., 2010; Ernest, Mladenow, & Strauss, 2017; Kapucu, 2008; Waugh, William & Streib, 2006). The lack of collaborative leadership of FEMA during Hurricane Katrina eroded the public's trust in government to be able to protect and assist them through the recovery of a disastrous event and prolonged the suffering of thousands of Americans unnecessarily (Bava et al., 2010).

The National Disaster Response Framework defined the collaborative nature of FEMA's organizational mission, "To be successful, any approach to the delivery of response capabilities will require an all-of-nation approach" (FEMA, 2019b, p. 34). Doyle (2019) defined "all-of-nation" as "all organizations operating in a conflict area to support peace and stability, to reach common goals, though typically not so far as to achieve an integrated response" (Doyle, 2019, p. 106). The FEMA guidance then stated, "Different federal departments or agencies lead the coordination of the Federal Government's response . . . supported by other agencies that bring their relevant capabilities to bear in responding to the incident" (FEMA, 2019b, p. 34) which supports a collaborative approach to recovery decision making.

### **Preparing for the Crisis**

Peters et al. (2011) attributed situational changes as contributory factors moving leadership from normal operations to crisis mode. Planning for actions in the recovery of disastrous weather events requires the leadership of emergency management to understand events of the past in terms of what has happened, what is likely to happen, and aftereffects of the incident (Laakso & Palomäki, 2013). The uniqueness of crisis leadership resides in ability of state and local government entities to relinquish control of the crisis to federal authorities as the immediate scope of the event exceeds their abilities to provide immediate relief (Bauman, 2011; Hurley, 2019; Naim & Montgomery, 2006; Olejarski, & Garnett, 2010). Federal entities must be competent and willing to bring the resources of the federal government to the situation to return civility to the area before returning control back to the State (Scavo et al., 2008).

The level of preparation a community completes prior to a storm determines the ability of government leaders to provide adequate recovery service in the aftermath of a major hurricane (Hurley, 2011, Kahn & Barondess, 2008; Kapucu, 2008). Community leaders can minimize the suffering of hurricane victims by providing pre-storm preparations and having a plan for the immediate recovery in the storm's aftermath (Curry, 2011). The key to understanding and implementing a crisis management plan is to acknowledge not one single plan is applicable in all situations and that flexibility is a necessary component for success (Ernest et al., 2017; Webb & Chevreau, 2006; Quinn et al., 2019).

Federal, state, and local leaders and first-line operating personnel maintain a close working relationship where the strengths and weaknesses of each are known and supported by the strengths and weaknesses of the others (Prewitt et al., 2011). Close relationships between the leaders, managers and other operating personnel provide beneficial assistance in the recovery

phase as strengths of one individual or organization can complement another's weakness to ensure adequate coverage of disaster services (Parmer et al., 2013; Prewitt et al., 2011). Baker (2011) maintained preparation in the form of knowledge of having available resources prepared and ready for deployment is an additional critical element of effective crisis management to provide immediate assistance to those in need.

Effective leadership requires the protection of resources from the destructive properties of a major hurricane and staged in an area away from the coastlines identified as the possible ground zero for the landing of a major hurricane (Baslo et al., 2009, Biedrzycki & Koltun, 2012; Birkland, 2006; Renda-Tanali, 2020). These resources must be maintained and secured through the storm and transportation back into the impacted area must be planned in advance to assist in the recovery efforts to expedite the immediate needs of recovery (Comfort et al., 2012). Leadership knowledge and preparation of the physical resources necessary for clearing roadways and providing for the safety and security of the remaining survivors of the storm are just as important as having competent, trained people prepared to respond to a crisis as it presents itself (Cook, 2009; Hurley, 2019).

Rouhanizadeh et al. (2019) asserted that improper or outdated legislative policies extensively restrict the recovery progress and hinder the use of reconstruction resources, causing delays in the recovery practices. Cooperation and collaboration of government agencies prior to a major hurricane require the identification of roles and responsibilities of all parties involved in the recovery process to minimize the suffering of hurricane victims (Bava et al., 2010; FEMA, 2019b; Kapucu, 2008; Kapucu & Garayev, 2013; Waugh & Streib, 2006). Local government's failure to participate in collaborations with other supporting agencies result in undefined roles contributing to the confusion of responsibilities in the aftermath of a major hurricane (Hettige et

al., 2018). Collaboration between federal policymakers and local recovery planning is critical in shaping the dimensions of the disaster recovery process (Ernest, Mladenow, & Strauss, 2017). Undefined roles and responsibilities of government agencies hinder and delay the recovery process, attributing to compounding disaster components that create more anguish for the victims of a major hurricane (Rogers et al., 2018; Liu & Huang, 2014; Vail, 2007). Poorly defined roles and duties of varied supporting agencies responsible for direct actions in the aftermath of a major hurricane can result in the creation of a climate conducive to criminal activities (Decker, 1999; Hettige et al., 2018; Spencer, 2017; Varano, 2010).

Hettige et al. (2018) attributed a lack of coordination between intergovernmental agencies as a contributing factor to the creation of the mass confusion in the immediate stage of recovery which ultimately encumbers the recovery efforts. Deflem & Sutphin (2009) asserted mass confusion among first responders and other law enforcement officers during Hurricane Katrina created a climate favorable to the criminal elements of society and contributed to the increase in compounding disaster components. Kroll-Smith, Baxter, and Jenkins (2015) detailed how disaster assistance became a source of “profound anxiety and fatigue” or even “a second calamity” due to the “vagaries of eligibility criteria” and the obstacle-laden paths many people had to navigate to access individual assistance from FEMA. Iversen (2018) concluded the road to recovery for residents in the lower socio-economic status as an “exercise peppered with government failures” (Iversen, 2018, np). Veronica Pareja (2019) similarly examined the “second storm” of Superstorm Sandy and concluded the bureaucratic and legal entanglements experienced by homeowners during the recovery process inhibited residents from receiving badly needed support. Pareja (2019) concluded the federal government’s red tape in the abstruse grant and loan processes and fraudulent insurance practices stymied the ability of thousands of

homeowners to receive FEMA relief and insurance coverage needed to rebuild their homes in the wake of Super Storm Sandy.

### **Criminal Activity During the Recovery Stage**

Evidence that criminal activity will increase with natural disasters accentuates the significance of focusing research on disaster-generated crimes in the immediate days of hurricane recovery (Spencer & Strobl, 2019). The lack of leadership in identifying the causes and corrective actions needed to minimize criminal activity of a vulnerable population created a gap in the recovery process (Varano et al., 2010). Local resources focus on the preservation of life in the immediate hours following a major hurricane and crimes involving property become secondary importance (Varano et al., 2010; Weil, 2020; Weil et al., 2021). Spencer (2017) argued property crimes increase in the immediate recovery of major hurricane as the criminal element take advantage of the diminished law enforcement presence.

“There are only a handful of papers that have investigated the crime and natural disaster relationship” (Spencer & Strobl, 2019, p. 318). Leitner and Helbich (2011), using Hurricane Katrina as an example, asserted a possible reason for increased criminal activity was the ignorance or unwillingness to comply with a mandatory evacuation order by a large population group. The defiant population group possibly included a large criminal element intent on looting and burglary of the homes and businesses of those people who complied with the order (Leitner & Helbich, 2011). Leitner & Helbich’s (2011) argued the reporting of criminal activity by law enforcement agencies in the aftermath of major hurricanes exhibited inconsistency in the categorization of criminal activity from one disaster to another which contaminates any sort of comparison from one storm to the next.



Prelog (2016) identified a lack of consistent reporting among law enforcement and aggregation of criminal activity contributed to the absence of valuable data used to further understand the failed leadership phenomena in a post-disaster scenario. Zahran et al. (2009) examined the impact of increased crime rates in Florida communities that experienced disasters such as floods, wildfires, and drought. Zahran et al. (2009) grouped their findings and then aggregated them to an annual level to articulate criminal activity after a disaster. Spencer (2017) amassed monthly data on criminal activity in a non-disastrous environment in Florida and categorized the activity in semiannual counts comparable to Zahran et al. (2009) findings. Spencer (2017) concluded increased crime per capita existed in counties directly impacted by the storm while neighboring counties experienced a decline in criminal activity.

Van Brown (2019) and Whittaker (2019) found criminal activity in the wake of natural disasters as not a result of a criminal element capitalizing on an opportunistic situation but rather a reflection of the social conditions of times. Van Brown (2019) and Whittaker (2019) contended marginalization of minority groups created a situation where the victims lashed out in frustration or necessity due to the inattention their communities received in the recovery process. Varano et al. (2010) researched the impact of Hurricane Katrina on Texas, New Orleans, and Phoenix by utilizing weekly time-series crime data to discover only a modest increase in criminal activity in the immediate stage of hurricane recovery. Varano et al. (2010), Van Brown (2019), and Whittaker (2019) noted that criminal activity is not a result of opportunistic situation by rather an indicator of the social conditions of the impacted area.

## Summary

The first 72 hours following the land fall of a major hurricane remain a critical time for the survivors of the storm (Batten, 2019; Collier, 2022; Dourandish, Zumel, & Manno, 2007). The debris from structures and trees may litter the area and roadways prohibiting first responders the ability to reach those in crisis (Cook, 2009). The damage caused to infrastructure may include such things as collapsed bridges, contaminated water supplies, sewage breaks, collapsed cell phone towers, damage to news media outlets, electrical services, and many other critical components of a modern society (Grinsted, Ditlevsen, & Christensen, 2019). People that remained in their household through the event can expect to live in primitive conditions with no means of communication, no electrical services, the inability to traverse the roads, the possibility of dealing with criminal elements, and, in some cases where homes are extremely damaged, exposure to the elements (Tomiczek et al., 2020; Weinkle et al., 2018).

The effective implementation of emergency management plans to assist the victims of major hurricane require local leadership to maintain a degree of flexibility in policy implementation to react to situations as they present themselves (Webb & Chevreau, 2006). Pre-planning for the possibility of an impending storm involves the open acceptance of local leaders to work with state and federal resources as the devastation created by a major hurricane will quickly overwhelm the resources of a local community (Hoch, 2017; Manning, 2020; Motavesseli, & Hajialiakbari, 2017). Local officials must recognize the need to work with other government agencies cooperatively and collaboratively prior to a storm's development to understand the availability of resources and plan for their use accordingly (Bava, Coffey, & Becker, 2010; Ernest, Mladenow, & Strauss, 2017; Kapucu, N., & Garayev, 2013). However, the past infrequency of major hurricanes created an element of complacency among those in

leadership positions where planning for disaster recovery received low priority (Garcia-Lopez, 2018; Grambling, 2021; Knutson et al., 2008; Yan, Zhang, & Knutson, 2017).

Kapucu and Van Wart (2011) examined the level of support necessary to cope with the complexities of dealing with a catastrophic event and argued policy designs should change accordingly to the environmental conditions, the operational field of administrative leaders, and stakeholders involved in the decision-making process. Pathak et al. (2020) concluded the decision-making in a post-disaster scenario involved rating a set of priorities in terms of community safety and adaptability that surpassed an individual's personal needs (Pathak et al., 2020).

Demiroz and Kapucu (2012) provided the failure of leadership to properly identify the correct level of planning created failures in recovery and contribute to the chaos within the recovery process with far-reaching consequences and uncontrollable outcomes. The ill-preparedness and planning failure of officials during Hurricane Katrina brought renewed attention to government decision-making in disaster scenarios (Boin et al., 2010; Burby, 2006; Nicholls & Picou, 2013; Pierre & Stephenson, 2008; Schneider, 2005; Senate, 2006; US House, 2006). Demiroz & Kapucu (2012) asserted the compounding disaster component of the levee breach in New Orleans created a “surprise” that paralyzed the initiation of the recovery response, which cascaded into the chaos of the days and weeks to follow. The circumstances suffered by the people of New Orleans brought attention to the inequities of FEMA producing many studies and a renewed interest in disaster recovery.

Denscombe (2003) and Mainardes, Alves, Raposo (2010) noted that exploratory research is designed to identify previously unknown phenomena. Accordingly, the study explored the opinions of the citizens in Bay County, Florida related to their experience in the days

immediately following the landfall of Hurricane Michael. The data analyzed in the study may be used as part of the foundation of other researchers to explore more effective means of providing immediate relief to disaster victims. The outcome of the study may be used by local officials and other policy makers in understanding the expectations of the impacted population and where updated policies are produced in accordance with the expectations of their citizenry.

### **Chapter 3 - Research Methodology**

The immediate days following the landfall of a major hurricane are a critical time where the lives and property of the survivors of the event are the most vulnerable (Harrald, 2006). The purpose of the study is to use the design of qualitative research to explore the perceptions and opinions of the people who experienced the immediate recovery of Hurricane Michael. Abraham Lincoln viewed the opinions of the public as the underlying motivation of government decision-making (Guelzo, 2014). Lincoln proclaimed in the Lincoln – Douglas debates, "in a government of the people, where the voice of all the men of the country enter substantially into the execution thereof . . . what lies at the bottom of it all, is public opinion" (Guelzo, 2014, p. 171). The motivation behind the research is to identify the unknown phenomena creating the delays in emergency response to minimize the likely of creating further suffering of hurricane victims.

Researchers have provided limited studies into the topic of immediate recovery from a hurricane, focusing more on long-term planning and community resilience (Rubin, 1985, 2009; Blackmon, Nakanishi, & Benson, 2017). Many community leaders have adopted the theory that the first 72 hours following a storm remains the responsibility of the individual (Batten, 2019; Collier, 2021). However, as population densities increase along coastal communities, the size and intensity of the storm can extend the immediate recovery period far beyond the initial 72 hours rule restricting a population from emergency services for weeks at a time (America, 2017; Batten, 2019). Lacking any modern comprehensive linear studies involving the immediate recovery from recent major hurricanes, a thorough understanding of the public's opinions related to the ability of government to provide immediate recovery services will provide a foundation for planners to consider in pre-hurricane planning.

The research involved the examination of the opinions of the survivors of a major hurricane to expose their perceptions of immediate recovery services to answer the previous stated research questions. In this chapter, the methods and design for conducting qualitative research are presented. The chapter will provide detailed information about the survey research methods and design, population, materials and instruments to be used, data collection, and the processing and analysis of collected data. The chapter concludes with a summary of the key points uncovered through the research process.

### **Research Methods and Design**

Addeo et al. (2019) defined ethnographic research as “the study of social interactions, behaviors and perceptions of communities in their own time and space and in their own everyday lives” (p. 10). Computer mediated communication (CMC) has become an integral part of everyday life where people world-wide commonly use social networks, blogs, chat rooms, and other online channels as a means of entertainment and to share their opinions, ideas, and educate themselves on issues (Addeo et al., 2019). Burawoy et al. (1991) argued the use of CMC as a method of completing a survey instrument provided a naturalistic and unobtrusive approach for survey participants to contribute their opinions in comfort, without anxiety, and on their time schedule. Braun et al. (2021) identified the advantages to online surveys rest with the researcher’s ability to address a wide range of research questions in an open and flexible environment. An online survey instrument used to collect data using a qualitative ethnographic methodology best suits the study as participants typed their responses using their own words, rather than selecting pre-determined answers, in an unobtrusive naturalistic environment producing a complex and honest account of their lived experience (Braun et. al, 2021).

Wiles et al. (2013) described the use of qualitative research in the online environment as an ethnographic approach in the study of online communities and groups. Tunçalp and Lê's (2014) provided a review of online ethnography and concluded the terminology used to describe online ethnographic research shared multiple definitions such as “virtual ethnography” (Grincheva, 2014; Hine, 2017), “computer assisted webnography” (Horster & Gottschalk, 2012), “netnography” (Kozinets, 2002), and “netnographic grounded theory” (Healy & McDonagh, 2013). Hine (2017) provided an understanding of virtual ethnography as an ethnographic approach to the use of the cyber space rather than ethnography that solely make use of digital technologies as tools of research. Puri (2007) noted the use of the term webnography as “an attempt to look at the web as an object of study, and to search for insights into the ‘natural conversations’ that occur in various web forums” (p. 388). Healy and McDonagh (2013) used netnography in the exploration of the fan discussions on online message boards among football enthusiast to develop theories on consumer behavior.

Healy and McDonagh (2013) applied the elements of grounded theory to an online community by using observed data within the message boards to identify themes within the context of the message board participants (Strauss & Corbin, 1990). Kozinets (1998) originally offered netnography as an explicit set of analytic methods applicable across a range of online participation. Kozinets (2002) adopted a different perspective on netnography in 2002 as the advancement of internet technology progressed. Kozinets' (2002) updated definition of netnography included, “a new qualitative research methodology that adapts ethnographic research techniques to the study of cultures and communities emerging through electronic networks” (p. 62). Kozinets (2015) explored the phenomenon again in 2015 taking into consideration increased popularity of internet technology and amended his definition of

netnography to include a “more human-centered, participative, personally, socially and emotionally engaged vector” (p. 96). The study utilized a variant of netnographic methodology approach by soliciting the opinions of those who use online technology as a means to obtain daily information about their society.

Neubauer, Witkop, and Varpio (2019) identified phenomenology as a “form of qualitative research that focused on the study of an individual’s lived experiences within the world” (p. 90). The qualitative study was exploratory in design to expose the opinions of the local population of Bay County, Florida on the roles of government in the immediate recovery of a major hurricane. Dourandish, Zumel, and Manno (2007) noted the challenges of leadership as part of minimizing the 72-hour rule of survivor independence of a local population from government services. The purpose of the study was to identify previously unknown phenomena connected to communities and the perceptions of the survivors in the area of landfalling hurricanes to expose the gaps in the existing administration of the post-recovery procedures. Phenomenological research is best suited for the research as the aim of the study is to explore the lived experience of a population (Holguín-Veras et al., 2014; Neubauer, Witkop, & Varpio, 2019).

The study used criterion sampling in the research design as the means of selection of a sample based on pre-established conditions (Padilla-Díaz. 2015) to identify and explore participants' opinions related to their lived experience with hurricane recovery. Online surveys were employed as a netnographic methodological approach to increase productivity and eliminate researcher bias while contributing to the overall validity and reliability of the study (Louangrath & Sutanapong, 2018). Survey participants delivered unobtrusive answers in a naturistic environment providing data in its purest form (Braun et. al, 2021).



### Survey Participants

Qutoshi (2018) noted phenomenology as a method of inquiry providing an intellectual engagement exploring the interpretations and meaning in understanding the lived world of human beings at a conscious level. Criterion sampling, as a means of information gathering, provided phenomenological research quality data as the importance of specific criteria identifies and articulates the issues in terms of the specific phenomena (Padilla-Díaz. 2015). Shetty (2022) explained the size of the sample population “should be large enough to sufficiently describe the phenomenon of interest and address the research question at hand” (n.p.). A large sample size risks having repetitive answers included in the survey data, thereby contaminating the survey results creating a bias by stacking participants replies towards one particular result (Kaplan, Chambers, & Glasgow, 2014). Large sampling size can “transform small differences into statistically significant differences” (Faber & Fonseca, 2014, p. 29). Mason (2010) noted while the targeted sampling size of 30 – 60 participants usually provide a point of saturation, a sampling size of as little as 10 participants can provide the researcher a good point of comprehensive assessment. The study obtained a large enough sampling population and achieved the point of saturation.

The study explored the perceptions, thoughts, and opinions of the population of Bay County, Florida related to the lived experiences of those who were present and survived Hurricane Michael and the immediate recovery efforts. Bay County, Florida resides in the Northern Panhandle of Northwest Florida with Panama City as the most populated of the towns with smaller communities surrounding the city’s outer limits (City Data, 2022). Hurricane Michael made landfall on the eastward boundary of the county where the City of Mexico Beach, Tyndall Air Force Base, Callaway, Parker, Millville, and Lynn Haven received the most force of

the storm (NOAA, 2019). Panama City and the unincorporated areas of the county also received significant damage while the City of Panama City Beach reported little damage (NOAA, 2019).

Bay County, Florida is one of Florida's smaller counties in terms of land mass encompassing the area. The United States Census Bureau (2012) reported the land area of the county consist of 1,467 square miles with only 759 square miles being land. Panama City Beach is a major tourist spot along the Gulf Coast with the city reporting over 4.5 million visitors annually (City of PCB, 2022). The State of Florida (2020) reported Bay County had a total population of 175,216 representing a 3.8% increase in population from the 2010 Census and ranking the county 30th in terms of population for the state. Data also indicated 90.7% of the residents had a high school or equivalent education with only 23.7% having a bachelor's degree or higher (City Data, 2022). The State of Florida (2020) additionally reported the median household income of the county as \$54,316 with 12.4% of the county living in poverty. The economic demographics reflected in the composition of Bay County are slightly lower than the State's other counties (State of Florida, 2020).

Shaver et al. (2019) noted population-based survey research "relies on the recruitment of participants" (n.p.) allowing for the effective collection of samples from the representative targeted source group. The study used social media and online local news media outlets to solicit survey participants. The study advertised the survey on the social media platforms Facebook, Instagram, and Google AdWords limiting the targeted population to the areas of Bay County, as allowed by the sites. The use of the internet in both the advertisement and distribution of the survey provided an effective means of reaching the residents within the geographical area (Hine, 2017; Shaver et al. 2019).

The study provided three qualification criteria as part of its design to increase the validity and reliability of the survey data.

1. Survey participants must have been at least 18 years of age at the time of landfall of Hurricane Michael in the county of Bay County, Florida.
2. Survey participants must have lived in the county of Bay County, Florida at the time of the landfall of Hurricane Michael.
3. Survey participants must not have been involved in a governmental leadership position (this includes first responders) immediately prior to or after the landfall of Hurricane Michael in the county of Bay County, Florida.

The first question requested if the survey candidate was over the age of 18 at the time of the landfall of Hurricane Michael. Biros (2018) explained minors lack the independence and decision-making aptitude to ethically and legally consent to participate in research. The study excluded minors from survey participation to increase the validity of the survey and to avoid any legal conflicts. Survey candidates responding of an age less than 18 at the time of Hurricane Michael's landfall were politely thanked for their interest and directed away from the survey.

The survey provided two other qualifying criteria requesting the survey candidate to divulge if they experienced the event and if they were in a governmental leadership role (including first responders) within the county prior to the hurricane or during the immediate recovery. The goal of the survey was to identify the opinions of the local population in the government's role in the immediate aftermath of Hurricane Michael. Survey participants not experiencing the event cannot add any substantive value and can only provide speculative answers from past experiences. Additionally, the survey aimed to capture the opinions of the local population as they witnessed and understood government actions from the perspective of a

citizen and not the decision-makers at the time of the storm (Guelzo, 2014). The survey included first responders as government leaders and included them as part of the exclusion criteria. A first responder's experience in hurricane recovery differs from the average citizen (Cortez, 2020; Harris et al., 2018; McKenny, 2018; Saunders et al., 2021) and could skew survey results. The criteria used to exclude participants ensured the collection of data would be of the highest quality and accurate representation of the opinions of the local population (Flynn & Korcуска, 2018) as it related to hurricane recovery. Survey participants failing to meet these criteria were redirected from the survey and thanked for their interest.

### **Materials and Instruments**

Lester (1999) identified the goal of a phenomenological research as to “illuminate the specific, to identify phenomena through how they are perceived by the actors in a situation” (p. 1). Phenomenological research translates into the gathering of rich deep data through exploration of the perceptions of people engaging in qualitative methods such as surveys, interviews, and observations (Neubauer, Witkop & Varpio, 2019; Qutoshi, 2018). Phenomenological research aims to describe a phenomenon, not explain it, where the data results are free from any preconceived assumptions or any preconceptions of the researcher (Flynn & Korcуска, 2018; Padilla-Díaz, 2015).

The study used a 15-question survey designed to solicit the opinions of those who have lived through the experience of the landfall of Hurricane Michael (Appendix A). A review of existing literature and emergency management rules, regulations, and laws at both the state and federal levels provided the foundation for the survey questions. The survey instrument design offered questions in an open-ended format allowing for survey participants to provide honest and unrestricted answers in an environment free of outside influences (Braun et. al, 2021; Louangrath

& Sutanapong, 2018). Exploratory qualitative research utilizing open-ended questioning permitted researchers to explore the phenomenon through a holistic lens allowing the researcher to identify themes within the issues studied (Hertlein & Ancheta, 2014). The survey instrument divided participants response into three parts: qualifying questions, demographic information about survey participants, and opinions of those who have experienced the immediate recovery of Hurricane Michael.

The first part of the survey aimed to identify the qualification of the survey candidate to participate in the study. Question 1 asked the survey candidate to identify their age at the time of the landfall of Hurricane Michael. Survey respondents that answered by stating they were younger than 18 at the time of the event were directed away from the study and thanked for their interest in participating. Questions 2 and 3 inquired about the survey candidate's location and if they were in a government leadership position at the time of landfall of Hurricane Michael. Those who were not on-the-ground and present through the immediate recovery efforts have no substantive value to add to the study and their answers would be speculative. The study aimed to expose the opinions of the citizenry of Bay County, Florida on the roles of government through the immediate recovery of a major hurricane. Government leaders having experience in preparing a community for a storm and leading through the immediate recovery were excluded from the study as their actions were the focal point of the study. The use of criteria sampling provided a basis for selection of survey participants in Part 1 of the survey.

Part II of the survey instrument explored the demographic information of the survey participants. The survey asked participants to identify their race, gender, ethnicity, and educational background. The study used the demographical data collected in the determination of identifying a representative sample of the target population for generalization purposes

(Connelly, 2013). Connelly (2013) noted random sampling of the population group would have demographical characteristics in the same proportions as the study population. Demographic information used to analyze the data, grouping like characteristics together to research trends that may appear in demographical comparisons, such as seeing if men and women or older and younger people have different responses (Braun et al., 2021).

The third part of the survey consist of 7 questions designed to explore the participants perception and opinion concerning governmental decision-making in the immediate recovery stage of a major hurricane. The first seven questions of Part III explored the survey participants knowledge of hurricane recovery and their thoughts about the competency of government to lead a community through a catastrophic weather event. The questions were derived from the literature review and explore the thoughts and opinions of the local population regarding the leadership of the different levels of responding agencies and their effectiveness in minimizing the immediate recovery time. Questions 8 through 14 were designed to expose the opinions of the local population on the strengths and weaknesses of different responding agencies.

The study initiated a pilot test of the first five respondents to ensure the accuracy of the survey design. Van Teijlingen and Hundley (2002) noted a pilot study does not ensure a successful primary study, but it does increase the likelihood of success. Ismail, Kinchin, and Edwards (2018) noted that pilot studies help researchers refine research questions to ensure that the answers to the questions increase the reliability and validity of the research. Pilot testing allows researchers to identify or refine a research question, discover the best way to pursue it, and estimate the time and resources needed to complete a larger, final version of the research.

### **Data Collection, Processing, and Analysis**

Patton (2002) viewed criterion sampling as the involvement of the identification of a particular set of criteria of significant importance, researcher articulation of a specific set of criteria, followed by a systematic review of those that meet the identified criterion. Cohen and Crabtree (2006) reasoned criterion sampling assisted to identify major system weaknesses for improvement. The study utilized criterion sampling in the determination of the qualifications within the first three questions of the survey. The survey candidates were asked to divulge if they were over the age of 18 at the time of the hurricane, whether they were in leadership position within government during Hurricane Michael, and if they personally experienced Hurricane Michael. Questions 4 – 7 used general criteria for the collection of demographic data such as the survey participant's race, gender, ethnicity, and educational level of survey participants. The study grouped and generalized demographic data to assist in finding trends and themes so they may provide a foundation for future research related to hurricane recovery.

The study used the online survey generating website, surveymonkey.com, as the means of data collection. With the approval of Liberty University Institutional Review Board (IRB), membership to the site was initiated and an online survey generated which was identical to the hard copy of the survey as presented to the IRB. Survey participants were asked to agree to an Online Consent Form (Appendix B) prior to engaging the survey. The online social media platforms Facebook and Instagram served as the advertising method to drive traffic to the survey site limiting the population group to those in the Bay County area.

The study advertised on the previously mentioned online media and social media sites to drive traffic to the Survey Monkey website where the user first experienced an Online Consent Form (Appendix B) requiring the survey candidate to agree to the study's conditions prior to

moving forward with the survey. The initial advertising included wording from the study's title such as, "Exploration of Perceptions of Hurricane Michael Recovery" and indicated anyone interested in taking the survey click-through to the next page. The online advertising appeared randomly over the course of a 7-day period to increase the likelihood of achieving saturation and redundancy in survey answers. The researcher removed the advertisements upon achievement of data saturation.

The Online Consent Form included a discussion of the confidential nature of the survey and informed the survey candidate of the need of agreement prior to beginning the survey questions. The research aimed to assure survey participants have a high level of confidentiality and anonymity to increase honesty in their answers and reduce any sort of political or social intimidation for external sources (Dewitt, 2020; Scholz & Lubell, 1998). Additionally, the study assured survey participants anonymity as no identifying information, such as the participants name or address were solicited as part of the survey.

The first five participants were treated as a pilot test group, as previously discussed. Survey researchers reviewed the pilot group reply to ensure the validity and reliability of the data and to assure research questions were meeting research expectations. The constant review of survey data assisted in identifying emerging themes. The qualitative analysis software NVivo served as the analytical software used to import survey data to identify emerging themes and relationships within participants response. Phillips and Lu (2018) reviewed Nvivo and described the software as a "complete multiple qualitative analysis tool . . . including sorting and filtering raw data, discovering, and building relationships among data . . ." (p. 1). Phillips and Lu (2018) concluded their review by asserting the software added significant value to qualitative research.



The researcher will maintain survey data for a period of three years in a confidential and secure environment.

### **Ethical Assurance**

The study considered the privacy and anonymity of the survey participants to be of paramount importance. The researcher submitted all plans related to this research to Liberty University's Institutional Review Board for their review and approval prior to any attempt to collect data related to the study. The study provided the survey candidate an Online Consent Form which included a privacy statement and an explanation on the use of the information. Upon acceptance of the consent form, the survey candidate was directed to the survey site to begin the survey. The survey used purposeful criterion sampling to target individuals that lived through the experience of Hurricane Michael, are over the age of 18, and were not in governmental leadership positions immediately prior to the storm or in its immediate aftermath.

The study drew from the recounted experience of survivors of Hurricane Michael through the answering of open-ended questions as part of the survey process. Survey participants risk possible social or political ridicule, harassment, or hostility from others if the study cannot guarantee the anonymity of survey participants (Salmons, 2014). The design of the survey mitigated any risk to survey participants should the data become compromised by outside sources. The survey did not solicit any personal information that would compromise the privacy or anonymity of the participants. The survey did not solicit the participants name, address, email, or work information to ensure anonymity to gain a true and honest account of the participant's experience.

The suggested study used the online survey generator website Survey Monkey to disseminate the survey instrument to qualified survey participants. The researcher selected Survey Monkey as the preferred data collection site as the security features of the website included the latest advancements in internet security. Survey Monkey proclaimed information collected on their site is protect by the second generation of Systems and Organizations Controls (SOC) through accredited data centers that employ the best practices of security and technical experts. Additionally, the site guarantees user protections in the collection of transmitted data through a secure and encrypted internet connection using Transport Layered Security (TLS) to protect login information and survey answers (Survey Monkey, 2022).

The researcher will maintain all forms of documented communication and data collected from the study on an encrypted USB flash drive secured in a lock-box in the researchers personal possession for a period of three years. The researcher will make data available to other researchers within this period upon written request and assurances of the protection and anonymity of survey participants' answers. Ambert et al. (1995) noted qualitative research is more personally invasive to survey participants as it encourages people to relive an experience in the past and ask them to reflect on the situation which may evoke deep rooted personal emotions. The nature of the study mandated the participation in the survey be voluntarily and done with the free-will of the participant without and coercion from outside influences. Volunteer participation is not only a legal requirement but helps to strengthen the effectiveness of the qualitative research process, as participants agree to relive their experience for the sake of knowledge (Braun et al., 2021). The study required survey candidates to first agree to an online informed consent form to ensure volunteers fully understood the research they were agreeing to participate

in, and to advise them of their rights, prior to participating in the survey (Braun et al.,2021; Hertlein & Ancheta, 2014; Salmons, 2014).

### **Summary**

The research used a phenomenological approach for the study. The study used the online survey generator website Survey Monkey as the source of data collection. The researcher monitored the number of recipients and analyze their responses to ensure achievement of the point of saturation. The first five recipients served as part of a pilot study to ensure data collected met the intentions of the research. Facebook, Instagram, and Google AdWords served as the vehicles to drive traffic to the survey site. Survey candidates had the ability to click the supporting links in any of the advertisements where they were directed to the Online Consent Form. Anonymity of the survey participants remained a high priority in the research study. The survey design excluded the collection of personal data such as survey participants name, address, email, and workplace to ensure participants are free from any outside influence that may skew survey results.

The study used a qualitative inquiry process based on an exploratory approach to employ open ended questions to gather the perceptions of the individual that lived through the immediate recovery of Hurricane Michael. The researcher used the data set collected from survey participants to employ a two-part analysis process drawing on narrative analysis and thematic analysis as provided by the qualitative analysis tool NVivo. The study addressed ethical assurances as necessary to protect the privacy of participants and ensure the validity of the research. The survey provided a detailed step-by-step procedure of both the data collection and analysis process for examination by other researchers. Other researchers may use the findings of

the suggested study as the foundation for future studies on how the shorten the period hurricane survivors are without government services.

## **Chapter 4 - Findings**

The purpose of the study is to identify previously unknown phenomena related to survivor perceptions connected to the immediate recovery of Bay County, Florida in the aftermath of Hurricane Michael. Such attitudes will provide a foundation for the planning community to expand upon the research, assist local leaders in effective decision-making, and to bring modern resources to bear that may assist in the recovery process, thereby saving lives and protecting property. The population group of the citizens of Bay County, Florida provided the basis for the study as the community is still recovering from Hurricane Michael and the struggles of immediate recovery are fresh in the minds of those who experienced the event. The exclusion of local leaders, including immediate and first responders, from participation in the survey offers a degree of assurance to minimize any personal bias from tainting the results of the data collection.

### **Results**

The anonymous online survey received a total of 253 views with 101 individuals completing the survey. One survey participant completed and submitted the survey, however, did not answer any of the questions. Therefore, the analysis of survey data is skewed by one result indicating 100 participants instead of the 101 participants.

The Information Consent Form identified the exclusion criteria to the survey candidates prior to engaging the survey instrument. Part I of the survey instrument requested the survey candidate verify their eligibility by requesting the survey candidate to confirm they were over 18 years of age at the time of the event, lived through Hurricane Michael and its immediate recover, and were not part of government leadership at the time of the storm. The survey instrument

automatically forwarded survey candidates that met exclusion criteria to an exit screen. The implementation of a two-step verification process increased the validity of the data collected by ensuring survey participants met the criteria of the design of the study. Survey candidates electing not to proceed with the study had the option to exit the survey by simply closing their browser or through the survey's exit screen. One hundred fifty-two survey candidates elected to not proceed with the survey.

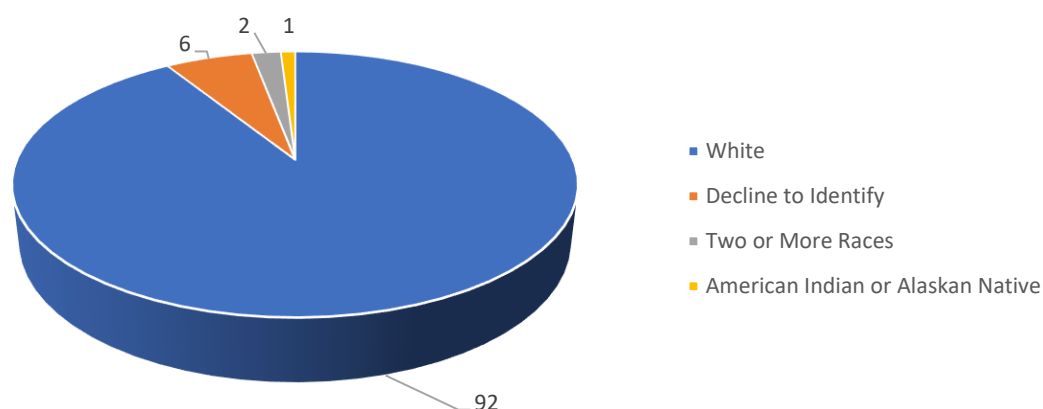
### **Demographics**

Starke et al. (2018) argued demographical information used in the application of formulating public policy, if left unexplored, may lead to “ineffectual, inequitable and unjust administration” (p. 3). Part II of the questionnaire explored the demographical composition of survey participants. The questionnaire requested participants disclose their ethnicity/race, gender, and level of education. The identification of such demographical data provided a greater comprehension of the data collected and assist in the establishment of the context of the study.

**Ethnicity / Race.** Figure 2 represents the ethnic and racial composition of survey participants. The study uses the standards and definitions of ethnicity and race as set forward by the 1997 Office of Management and Budget (OMB) Standards for the Classification of Federal Data on Race and Ethnicity, also known as OMB Directive 15, as amended in 2003. The amended standard included a minimum of 5 race categories and mandated the placement of a separate Hispanic identifier question preceding the race question in all data sets for studies involving federal “household surveys, administrative forms and records, and other data collections” (p. 58782).

An overwhelming number of survey participants, 92 in total, identified themselves as being white. Six of the survey participants declined to self-identify their race/ethnicity with one participant reporting two or more races and one additional participant identifying as an American Indian or Alaskan Native. No participants identified themselves as being Hispanic, Asian, Black or African American, or Native Hawaiian or Pacific Islander.

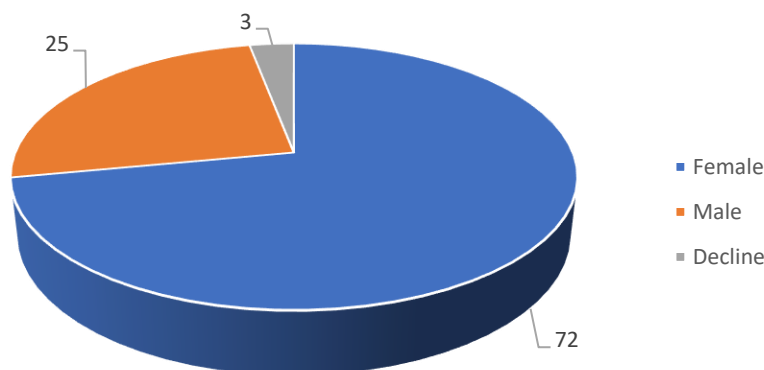
*Figure 2*                      *Participation by Ethnicity / Race*



*N = 101 of online responses*

**Gender.** Figure 2 depicts the distribution of participants by gender. The questionnaire presented participants with four gender options to be as inclusive and respectful of the survey participants as possible. The traditional male and female options were available as well as an “other” category for those that do not conform to traditional standards. The survey also presented an option to decline to identify gender for those uncomfortable with answering the question. All 100 participants provided an answer to the question with 72 individuals identifying as female and 25 individuals reporting to be male. Three of the survey participants declined to disclose their gender and no participants selected the “other” option.

Figure 3

*Participation by Gender*

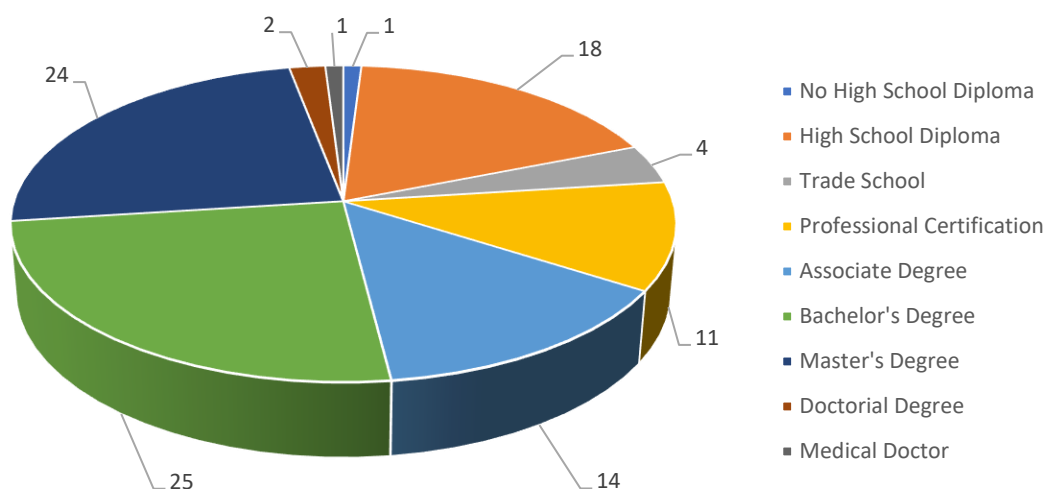
*N = 100 of online responses*

**Education.** Connelly et al. (2016) rationalized the measure of an individual's education is frequently incorporated into the analyses of a variety of social determinations as an indicator of validity for social or political change. Connelly et al. (2016) further asserted the education level of a society provides a credible explanatory factor influencing change in social, political, and economic phenomena. The questionnaire requested participants identify their educational attainment and options provided ranging from “did not graduate high school” through to “medical doctor”.

Figure 3 depicts the distribution of education attainment among the survey participants. Eleven of the participants cited they possess professional certifications, 14 of the participants reported having an Associate degree, 18 cited having a high school diploma or equivalent, 24 stated they have a Master's degree, and 25 participants reported having Bachelor's degrees. Two respondents reported having Doctorial degrees and one participant indicated having a Medical Doctor's degree. Four of the survey participants stated they had graduated from a Trade school. One participant did not have a high school diploma.



Figure 4 Participation by Educational Attainment



*N = 100 of online responses*

**Research Question 1.** Research Question 1 asked, “What issues warrant consideration by local governments when preparing for a hurricane to make landfall?” The design of Questions 8, 11, and 14 collected raw data to support Research Question 1. Survey questions related to the first research question provided below.

8. In your own words, describe the challenges you experienced following the landfall of Hurricane Michael.

11. Based on your experience, what assistance provided by government entities best aided you in the days immediately following the landfall of Hurricane Michael?

14. In your opinion, what could you have done personally to better prepare for the challenges of the immediate recovery of Hurricane Michael?

Analysis of the raw data of Question 8 exposed three themes as represented in Table 1. Survey respondents indicated the major challenges experienced were a lack of food and water distribution, lack of electrical power, and a lack of communication as the primary challenges in the immediate stage of hurricane recovery.

*Table 1. Themes Identified: Survey Question 8*

Theme	Number of Responses
Food and Water Distribution	55
Electrical Power	45
Communication Improvement	51

The design of Question 8 solicited the perception from hurricane survivors on the major challenges they experienced in the immediate aftermath of Hurricane Michael. A review of the single word frequency for Question 8 brought forward three themes as major challenges in immediate hurricane recovery. Survey contributors used words of lessor frequency but of the same meaning. These words are included as part of the composition of the three identified themes but not included as part of the single word frequency count.

Fifty-five of the respondents specially indicated the availability of food and water as a major challenge encountered as part of the landfall of Hurricane Michael. Survey participants indicated food supplies purchased as part of their pre-storm preparations dwindled quickly and running potable water was completely absent after landfall of Hurricane Michael. Three participants cited they prepared for the storm by stocking shelves and purchasing food and water, but their cache of food supplies quickly eroded within days after the storm with no ability to travel to food distributions sites. Two of those who completed the survey experienced total

annihilation of their home. These two individuals cited their preparation through the stockpiling of food and water meant very little as their homes were destroyed.

A significant number of survey participants, 45 in total, cited the loss of power as a major challenge in the aftermath of Hurricane Michael. A single word frequency analysis indicated several words of lesser frequency as the secondary challenge resulting from a loss of electricity. These survey participants voiced their frustration as a loss of water, air conditioning, refrigeration, inability to cook food, and a loss of communication as part of the challenges of living without electricity. Additionally, survey participants indicated the loss of power contributed to the lack of communication with the outside world as there was no means to access local news through radio, television, or internet.

The third theme indicated a lack of communication as a major challenge of immediate recovery. Respondents used the word “communication” a total of 51 times within the answer to the survey question. Contributors to the survey varied in their definition or use of the word “communication.” Thirty-one of the participants used the word “communication” in the context as to use of a two-way device to speak with others such as cell phones or other communicative devices. The remaining 20 individuals used the word to indicate communication as a form of media information sharing such as the dissemination of information by local authorities. Contributors used the singular word “phone” a total of 27 times within the answer to Question 8 which also contribute to the theme of communication.

The design of Question 11 identified the perceptions of hurricane survivors as they experienced positive aspects of government service in the immediate time after Hurricane Michael. Ninety-one of the survey takers answered Question 11. Nine of the respondents declined to answer the question and left the answer blank. An analysis of the 91 replies brought

forward three separate themes: absence of government services, debris removal, and proactive law enforcement. Table 2 provides a summation of the themes and responses.

*Table 2. Themes Identified: Survey Question 11*

Theme	Number of Responses
Absence of Government Services	55
Debris Removal	27
Proactive Law Enforcement	8

Numerous respondents used the answer to the question as an avenue to vent frustration of a clear absence of government services within the immediate days following Hurricane Michael. Thirty-three of the respondents used the single word “none” as part of their answer to describe their experience with government organizations in the immediate aftermath of the storm. Twelve respondents indicated the only assistance received came non-governmental organizations (NGO) such as the American Red Cross or faith-based organizations with no assistance provided by government entities. The summation of the answers of “none” and NGO collectively account for 55 of the 91 replies and are considered as part of the theme of “absence of government services.”

Many of the survey takers cited the most immediate positive experience with government services as removal of debris. The answer to the Question 11 produced a word frequency count of 27 replies with the combination of the word’s “debris” and “removal” surfacing through single frequency occurrences and bigrams. Survey takers complimented government services in their expediency of removal of debris from the roadways to allow emergency providers access to areas made inaccessible by the storm. Other survey respondents compliment government services on

the removal of debris collected from personal property which assisted individuals in the early part of the recovery process.

Survey participants expressed a third theme of the actions of local authorities and the National Guard as significantly aiding in the immediate recovery process through actions of safety and security. Cook (2009) noted that the safety and security of hurricane survivors are paramount during the immediate days following the landfall of a major hurricane. Tomiczek et al. (2020) warned hurricane survivors to prepare to deal with criminal elements in the aftermath of a major hurricane. Leitner and Helbich (2011) argued the increased population density along the coastal communities have increased the requirement for a strong law enforcement presence in the form of local and military personnel to guarantee adequate safety and security services in hurricane recovery.

Eight of the survey participants expressed a positive experience with the National Guard in providing food, water, ice, and security services. Survey participant #91 expressed appreciation to outside agencies such as the City of Miami and the Florida Highway Patrol for sending additional resources in the form of equipment and personnel to assist in the maintaining order and civility. Survey participant # 95 echoed the sentiments of appreciation but were mildly critical as the services did not appear on site until a week or later after Hurricane Michael had passed through the area.

The research design of Question 14 required the survey participant to reflect on their own actions in preparation of the landfall of Hurricane Michael and how they could better prepare for the storm. Birkland (2006) suggested minimization of recovery time from a catastrophic weather event has a direct correlation to preparation prior to the landfall of the storm. The design of the question brought forward lessons learned about individual hurricane preparation and how

government services may be able to better assist in hurricane recovery planning. Three separate themes surfaced: improved storm forecasting, the need for portable electricity, and government services maximized. Table 3 summarizes the identified themes and responses.

*Table 3. Themes Identified: Survey Question 14*

Theme	Number of Responses
Improved Storm Forecasting	12
Need of Portable Electricity	18
Government Services Maximized	24

The analysis of the 100 survey respondents revealed 96 answers with four participants electing not to answer the question. Twelve of the survey participants voiced a concern about the accuracy of media reporting of the magnitude and intensity of the storm prior to its landfall which contributed to the theme of improved storm forecasting. Five of the twelve respondents (respondent # 28, 36, 50, 53, and 82) cited media outlets reported the intensity of the storm to be a category 2 or 3 the night prior to landfall with reports of the storm intensity reaching category 3 or stronger status the morning of landfall. Respondent #26 and #82 indicated they would have evacuated the day before if more accurate forecasting were available.

The second theme derived from Question 14 related to the need for electricity to power the necessities such as refrigeration, lights, and communicative devices. Eighteen of the 96 survey participants expressed portable electrical producing devices such as portable generators could have made life more bearable during the days and weeks spent without electricity. Four survey participants (survey participant # 26, 41, 49, and 75) indicated they had generators, but

the generators only lasted a few hours before running out of fuel and no gasoline was available to replenish the tanks.

The majority of answers received from Question 14 presented the theme of “maximization of government services.” Twenty-four of survey participants reported no method of individual planning could prepare for the devastation of a direct strike from a Category 5 hurricane. Eight of the survey participants stated they thought they prepared for the storm but quickly realized they were underprepared for the intensity of destruction created by Hurricane Michael. Survey participant #73 provided a summarization of the answer that accurately describes the sentiments of the 24 individuals indicated as part of this theme, “No level of individual preparation can be done to adequately prepare you for a Category 5 hurricane.”

**Research Question 2.** Research Question 2 asked, “What is the role of the local government in the first 72 hours following a hurricane landfall?” The design of Questions 9, 12, and 15 of the survey instrument collected data on this question. Listed below are the survey questions associated with Research Question 2.

9. Based on your experience, describe how government aided you in the first 72 hours after the landfall of Hurricane Michael.

12. Based on your experience, describe how government can better assist the survivors through the first 72 hours following the landfall of a major hurricane.

15. In your opinion, please describe what government services (local, state, or federal) could have operated more efficiently within the first 72 hours following the landfall of Hurricane Michael.

The design of Question 9 offered the survey taker an opportunity to voice their perception of how government aided in their individual hurricane recovery needs within the first 72 hours after the hurricane's passing. The question is similar in design to Question 11 but specifically asks the survey taker to identify any assistance from government. Question 11 is inclusive of any services provided by local government. Question 9 differentiates itself from Question 11 by asking survey participants to identify any government services received versus the best government services received.

All 100 participants provided an answer to Question 9 with 14 survey participants writing extensive answers going far beyond the scope of the question. Four of the survey participants (participant # 1, 29, 31, and 37) answered the question with uncertainty as they had no availability to electricity, communication, or news to what was happening in their area. Eighteen of the survey participants indicated proactive action by law enforcement and National Guard were present through patrolling neighborhoods utilizing all-terrain vehicles and other off-road vehicles to bring rescue and recovery operations to those in need. Four of survey participants (Participant # 31, 84, 92, and 99) expanded upon their answer by stating the proactive patrols additionally kept looters away from their neighborhoods. These 18 individuals compose the theme of Proactive Law Enforcement.

The second theme appearing in survey participants answers was an Absence of Government Services. Forty-six of the survey participants indicated they neither received nor witnessed any government actions within the first 72 hours. Table 4 depicts a summary of the themes and participants identified as part of Question 9.



*Table 4. Themes Identified: Survey Question 9*

Theme	Number of Responses
Proactive Law Enforcement	18
Absence of Government Services	46

Question 12 solicited the perception of the public in determining better ways government can aid hurricane victims within the first 72 hours after the landfall of a major hurricane.

Question 12 is a forward-looking question soliciting answers based on the personal experiences of the immediate needs of the survivors of Hurricane Michael. The goal of the question is to understand the perception of the public in determining actions government entities may be able to deliver in a more efficient or productive manner.

A review of the raw data revealed 11 of the 100 survey participants did not respond to the question. Five participants answered the question with short comments that did not directly relate to the question and thus excluded from theme identification. Analysis of the remaining data produced themes of improvement of government services to assist in immediate hurricane recovery. The analysis of the raw data produced the following themes: Need of More Immediate Providers, Collaborative Prior Planning, Communication Improvement, Food and Water Distribution, and Emergency Shelter. Table 5 summaries the themes and respondents.

*Table 5. Themes Identified: Survey Question 12*

Theme	Number of Responses
Need of More Immediate Providers	22
Collaborative Prior Planning	8
Communication Improvements	21
Food and Water Distribution	9
Emergency Shelter	8

The theme of the “need of more immediate providers” presented itself 22 times within the answers given for Question 12. The interpretation of survey answers concluded the consensus of gratitude of the efforts provided by local authorities but slow reactions from the State level in the mobilization of the National Guard and non-support from the Federal government contributed to the anguish suffered in the days of immediate recovery. Nineteen survey participants fell short of providing direct recommendations of the source of additional immediate providers. Participant #3, 16, and 25 recommended the use of more National Guard troops with the #3 participant further suggesting the pre-mobilization of National Guard troops from areas of the State not impacted by the storm.

Eight of the survey participants answered Question 12 by stating increased prior planning on the part of local government would decrease the challenges associated with immediate hurricane recovery. Participant #28 recommended pre-planning in the form of pre-staging of recovery personnel and equipment further inland and away from the landfall site to avoid the full strength of the storm. Additionally, Participant #90 cited the need of collaborative planning with other emergency operating agencies to plan for rapid deployment of immediate responders with

the deployment of essential supplies within the first 24 hours and not the 72-hour rule that has become the acceptable standard among emergency personnel.

A large number of survey participants, 21 in total, stated the improvement of communication as a need government entities can improve upon to minimize confusion after the landfall of a hurricane. Eleven of the 21 individuals answering the question cited the need of communication in the form of news and information from government emergency broadcasting to provide locations of food distribution sites, road and bridge openings, and other critical information to assist in recovery efforts. The remaining 10 survey answers voiced a need for communication in the form of cellular services to correspond with first responders, medical services, insurance companies, and family members.

Food and Water distribution surfaced as a theme through the answers to Question 12. A summary of the 9 survey participant presented criticism of governments services as they had no means to know the location of food distribution sites. Additionally, survey participants that had knowledge of food distribution sites had no means to travel to and from the sites as road closures and excessive traffic prohibited them from accessing the sites. Participant #68 recommended government entities device a plan to have food and water delivered directly to those in need vice creating stations where food and water are only available to those healthy enough to endure the harsh environmental conditions necessary to access the sites.

The last theme identified through the answers to Question 12 suggested local government could improve immediate recovery by providing shelter for those who lost their home through the landfall of a major hurricane. Eight of the survey takers responded to question with criticism of having no immediate means of shelter for those families who lost their homes during Hurricane Michael. Participant #88 mentioned the involvement of FEMA and the deployment of

FEMA trailers as a benefit to those in need but criticized the process as the trailers were unavailable to the public until weeks after the landfall of Hurricane Michael with complicated rules to obtain the trailers.

The design of Question 15 resembles Question 12 but expands the question of the role of government responsibility to not only local government but to include State and Federal government as well. The anticipated answers to the question sought to reveal the perceptions of the impacted public on the various levels of government involvement in hurricane recovery. The objective of the question is to identify public perceptions of best practices regardless of the level of government providing the services. Local government officials may use the information as part of their pre-planning process to request these services in advance of a major hurricane.

Eleven of the 100 survey participants declined to answer the question with another 16 participants provided answers that did not directly relate to the question. The 16 participants that did not provide meaningful answers either did not understand the question or used the question to further vent frustrations with government in general not related to hurricane recovery. Theme identification excluded these 27 individuals as their answers or lack of answers provided no meaningful data. Themes identified from the remainder of the raw data include the need for more immediate responders, government services maximized, and communication improvements.

Table 6 provides a summary of the themes and number of survey participants.

*Table 6. Themes Identified: Survey Question 15*

Theme	Number of Responses
Need of More Immediate Providers	18
Government Services Maximized	14

Communication Improvements	21
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Eighteen of the survey participants stated a need for more immediate responders to assist in all aspects of hurricane recovery. Fourteen of the survey participants stated nothing could have been better within the first 72 hours by any level of government due to the magnitude of Hurricane Michael. Respondent # 6, 7, 36, and 47 recognized the efforts of local first responders and expressed gratitude and understanding of the magnitude of the task they faced. Only three (respondent # 1, 47, and 60) of the eighteen respondents within this theme provided a suggestion to the source of the additional manpower which were National Guard and Active-Duty military personnel.

The ability to communicate with friends, family, and emergency services resurfaced as a theme within Question 15. Survey respondents appeared to avoid directly answering the question as written by not specifically addressing the level of government service responsible to providing communication services. Twelve of the individuals answering Question 15 expressed their need to communicate with family and emergency services during the first 72 hours after the landfall of Hurricane Michel but cellular or landline services were unavailable. Nine of the survey participants answered Question 15 by expressing a need of communicative services as part of an information distribution system to inform hurricane survivors of the location of recovery services such as food distribution sites, medical services, phone banks, and other crucial services made unavailable as part of the landfall of the hurricane.

**Research Question 3.** Research Question 3 asked, “What does the public view as being the most hazardous situation occurring as a result of a hurricane?” The design of

Questions 10 and 13 of the survey collected data on this question. Listed below are the survey questions associated with Research Question 3.

10. In your opinion, how can the federal government assist local communities in the immediate recovery efforts of a major hurricane?

13. Based on your experience, describe the most hazardous situation you experienced during Hurricane Michael.

Question 10 solicits survey responses on the perception of ways the federal government may assist local communities experiencing recovery of a major hurricane. The logic of the question supposed the survey participant's answers would provide insight to the perception of identification of the most hazardous situation encountered as part of a major hurricane. The involvement of federal government occurs when the situation encountered is above the scope of local and state resource (Biedrzycki & Koltun, 2012, Willison et al., 2019). Therefore, the perception of the need of federal government involvement in hurricane recovery provides an indication of the most hazardous situation encountered. The following themes surfaced through single word and bigram analysis of the raw data: communication improvements, debris removal, FEMA reform, more immediate responders, and proactive law enforcement.

*Table 7. Themes Identified: Survey Question 10*

Theme	Number of Responses
Communication Improvement	12
Debris Removal	12
FEMA Reform	10
Need of More Immediate Providers	19

Proactive Law Enforcement	7
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Two of the survey participants declined to provide an answer to Question 10 with another 18 individuals failing to provide answers directly related to the question. Several of the 18 participants answering the question were cynical in their reply or critical of the federal government in general rather than providing meaningful data for analysis. The remaining participants provided valuable data resulting in the five themes as identified above.

The theme of communication improvement surfaced as part of Question 10 with public perception sentiments similar to the themes previously identified in other survey questions. Four of the survey participants (#12, 79, 87, and 88) echoed the sentiments of previous survey answers as no means of communication contributed to the failure to disseminate information prolonged immediate hurricane recovery. Survey participant # 19 suggested the role of federal government as one of a coordinator of emergency services with communication disseminated via a centralized location.

Twelve survey takers voiced their perception of the role of federal government in hurricane recovery could best serve hurricane victims through the assistance of debris removal. Five survey respondents (# 10, 51, 59, 84, and 98) mentioned the use of federal assets in the form of having heavy equipment staged and readily available for the removal of trees from the roadways as a method of assisting people in immediate hurricane recovery. The remaining survey participants within this theme stated assistance in tree removal from privately owned property to access the homes made inaccessible by Hurricane Michael as an asset federal assistance could provide.

Ten of the survey participants provided answers to Question 10 referencing the need of reform the federal assistance programs to be more accessible and reduce the bureaucratic red tape to receive financial assistance. The 10 survey takers comprise the theme of FEMA Reform as much of the governance of federal financial assistance requires coordination through FEMA (Biedrzycki & Koltun, 2012, Lipton & Shane, 2005). A bigram analysis revealed half of the ten respondents (respondent # 6, 25, 64, 77, and 100) specifically mentioned FEMA and an overly complicated bureaucratic process as being a major hindrance in receiving federal aid in the form of financial assistance in the post-hurricane environment.

A majority of survey participants, 19 in total, responded by indicating federal assistance could best serve hurricane survivors by increasing the manpower necessary for the needs of immediate recovery. Seven of the survey contributors cited proactive law enforcement in the form of patrolling to deter looters (participant # 50 and 82) and roadblocks to turn away potential grifters intent on taking advantage of hurricane victims (participant # 5, 83, 85, and 91) as areas of need of federal assistance. The two themes work in concert with each other as an increase of manpower allows local and state law enforcement to dedicate more human resources concentrated on proactive law enforcement while other responders assume the duties of debris removal and humanitarian assistance.

Question 13 directly asked survey participants to describe the most hazardous situation they experienced during Hurricane Michael. Ninety-seven of the 100 participants answered the question with 3 declining to answer and 3 failing to provide meaningful answers decipherable into themes. The three themes identified during the analysis of answers to Question 13 are as follows: downed power lines, fallen trees, and individuals with malicious intent. Table 8 is a summary of the themes associated with Question 13.



*Table 8. Themes Identified: Survey Question 13*

Theme	Number of Responses
Downed Power Lines	22
Fallen Trees	29
Individuals with Malicious Intent	21

The perception of the most hazardous situation experienced by individuals experiencing Hurricane Michael was the fallen trees that impacted the individual's home and limited access to roads. A deeper analysis of the question revealed nine of the 29 individuals experienced home damage as a result of trees falling on their property. Ten respondents stated fallen trees had them pinned into their homes and prohibited them from leaving their property. The remainder of the answers included in the theme expressed the dangers of physically removing the fallen trees as their most hazardous situation.

The theme of downed power lines surfaced in the answers to the Question 13. Twenty-two people answered the question with 13 individuals citing they were not knowledgeable if the downed power lines were inert or carried any residual electricity. Nine of the other survey participant answers expressed the fear of driving on roads with downed power lines and the hazards that accompany such a situation.

The final theme identified deals with the fear of confronting those people with malicious intent to deprive hurricane survivors of their property or money. Fourteen of the answers to the question specifically relayed stories of hurricane survivors protecting property against looters looking for opportunities to pilfer belongs from homes of evacuees or helpless individuals. Two of the survey participants answers (participant # 35 and 91) mentioned grifters coming from

outside the impact area to take advantage of those in need. Five of the survey participants (participant # 10, 21, 35, 65, and 66) answered Question 13 by expressing their perceptions of dealing with unethical or unlicensed contractors and the most hazardous situation they encountered as a result of the landfall of Hurricane Michael.

### **Evaluation of Findings**

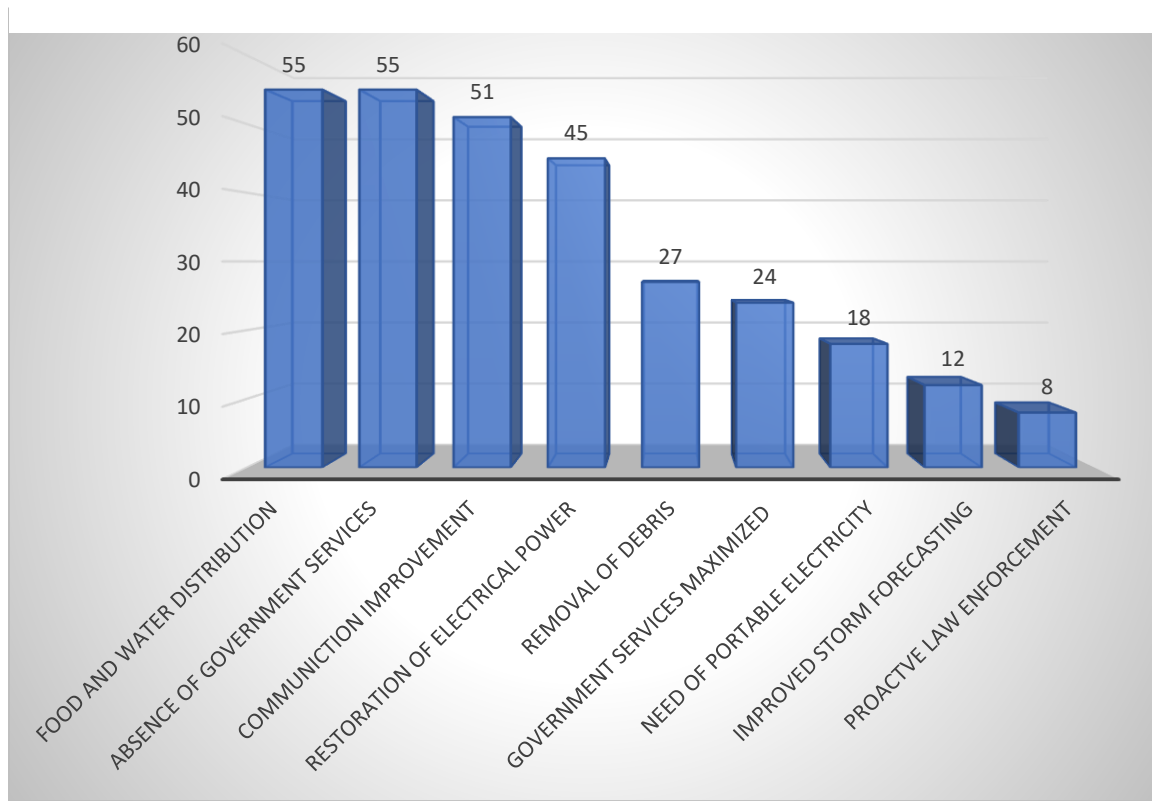
The purpose of this qualitative phenomenological study was to explore public perception of the community of the residence of Bay County, Florida that experienced the landfall and immediate recovery efforts created by Hurricane Michael. The motivation of the research was to expose the gaps in the existing administration of the post-recovery plans and procedures to bring aid to hurricane victims in the most efficient and expedient manner available. The collection of data through an anonymous on-line survey served as the mechanism of data collection. A review of the raw data produced from survey participants shaped a conclusion affirming the data presented a valid representation of the public perceptions of the localized population on the challenges associated with hurricane recovery.

Emergency management experts accept the theory of the first 72 hours following a hurricane are the responsibilities of individuals and emergency services may not be able to reach those in need (Admin., 2015; Collier, 2021; Dourandish, Zumel, & Manno, 2007). Improvement of this 72-hour theme is paramount to minimize the suffering of hurricane victims and compounding disaster components, yet immediate recovery remains an understudied element of emergency response (Harris, 2018; Holguín-Veras et al., 2014). The public perception of community needs in the immediate hours and days following the land fall of a hurricane serve as the driving force in the design and implementation of policy decision-making (Lindner & Crockcroft, 2013).

Multiagency collaboration at varying levels of government support can either assist in the recovery process or create additional problems for the victims (Liu & Huang, 2014; Rogers et al., 2018; Vail, 2007). Collaboration between local, state, and federal agencies require an understanding and acceptance of the shifting roles of governmental responsibilities (Col, 2007; Harris et al., 2018; Kapucu et al., 2009; Smith, Sabbag, & Rohmer, 2018). Naim and Montgomery (2006) and Smith et al. (2018) maintained administration at all levels must be willing to set aside disputes of territorial roles and maintain flexible arrangements among varied supporting agencies when addressing the needs of a community that has suffered through a natural disaster.

**Research Question 1.** The first research question asked “What issues warrant consideration by local governments when preparing for a hurricane to make landfall?” Survey Questions 8, 11, and 14 produced themes that assist in understanding the public perception of issues that warrant consideration by local governments. Figure 5 depicts the themes identified within the three survey questions. Themes are sorted from the highest number of themes identified to the smallest number.

Figure 5. *Research Question 1 Themes*

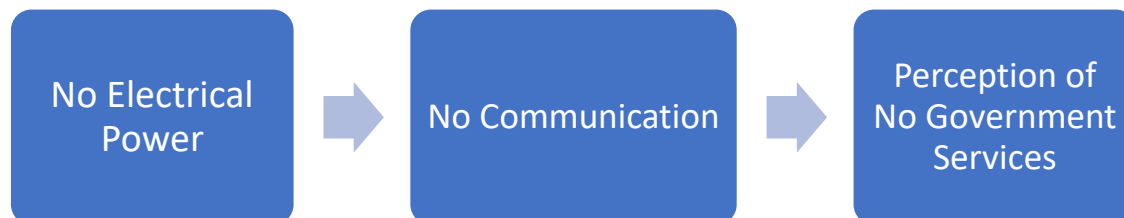


The summary of identified themes within Research Question One presents two issues of equal importance in the perception of the surveyed public. Fifty-five of the respondents identified the need of distribution of food and water warrants additional consideration in pre-planning and execution of the plan after the landfall of a major hurricane. Participants voiced concern of avoiding drinking contaminated water and access to the availability of food supplies in a post-hurricane environment. The theme “access to food supplies” is supported by the theme “debris removal” as the perception of significant issue warranting the attention of local government prior to a storm’s arrival. Debris prohibits people from leaving their homes and makes traversing the roads in search of food distribution sites a risk. An equal amount of survey participants, another fifty-five participants, answered the question by stating they experienced no

government services following Hurricane Michael regardless of the severity of their need for assistance. These fifty-five individuals were highly critical of the lack of support received from government entities in immediate hurricane recovery.

The theme of communication closely follows the importance of pre-storm planning in the perception of the surveyed individuals. The need of communication among hurricane survivors correlates to the perception of the absence of government services as information about critical government services and medical services were unknown as communicative devices were inoperable due to the lack of electricity. Eighteen of the survey participants contributed to the theme of the perception of the need of portable electrical devices such as generators as an issue that warrants local government's attention in the pre-planning stages of hurricane preparation. Figure 6 below shows the correlation between the three themes.

*Figure 6. Path to Perception of No Government Service*



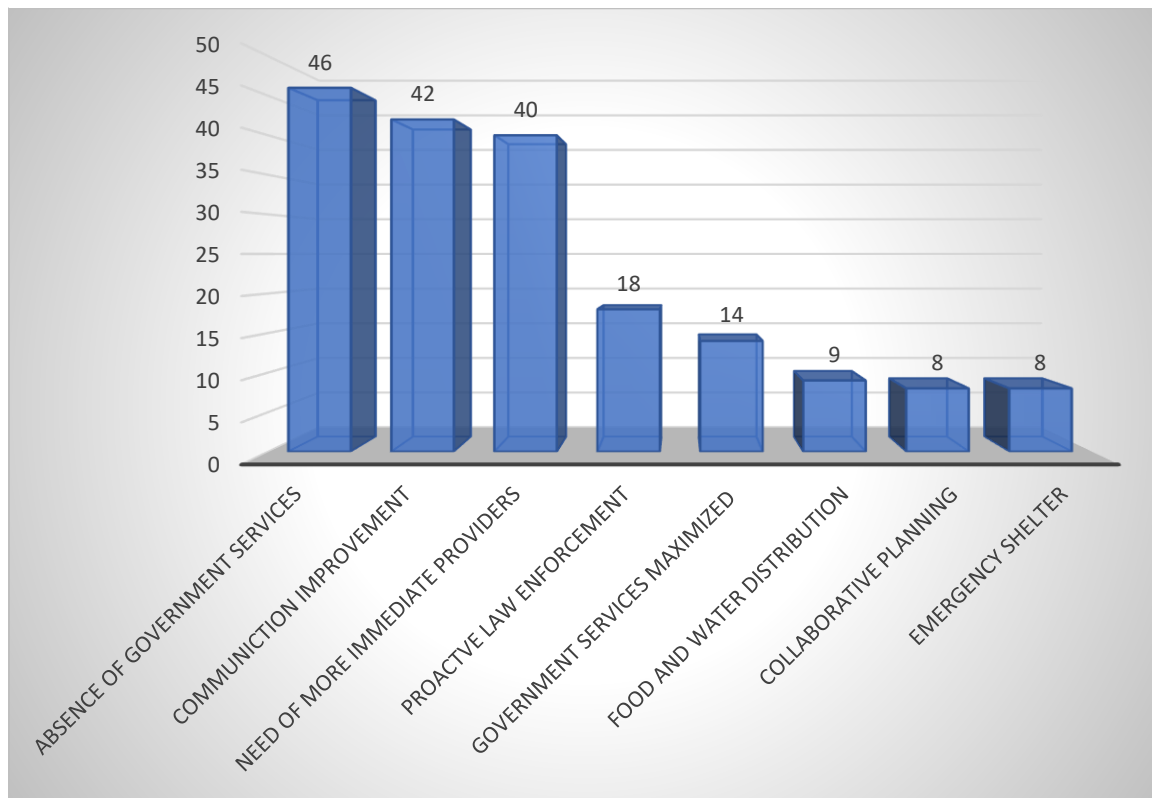
A significant number of survey respondents, 24 in total, contributed to the theme of “government services maximized”. This theme emerged as several of the survey participants provided answers claiming the voracity of Hurricane Michael created recovery conditions far beyond the scope and ability of local government. The perception of these 24 individuals is local government did everything within their abilities to provide government services.

The theme of the need of improvements in forecasting surfaced through survey answer analysis. Seven of the survey responses (participant # 28, 33, 36, 53, 62, 72, and 82) cited meteorologist inaccurately forecasted the strength of Hurricane Michael hours before landfall categorized the storm as a category 2 to 3 just hours before landfall. The perception of surveyed public brings forward the issues of accurate forecasting as a role of government in pre-storm preparations so people within the hurricane's path may make informed decisions on the need to evacuate or remain in their homes.

The final theme surfacing as part of Research Question 1 is the perception of the need of more proactive law enforcement. Eight of the survey participants mentioned proactive law enforcement through patrolling of areas vulnerable to looters and door-to-door checks to ensure care is given to those requiring medical assistance. Survey answers additional indicated proactive law enforcement through the vetting of individuals trying to enter the county to expose those with nefarious intent or to turn-away those trying to take advantage of the services offered to hurricane victims are needs that warrant attention by local governments in pre-storm preparations.

**Research Question 2.** Research Question 2 asked, "What is the role of the local government in the first 72 hours following a hurricane landfall?" The design of Questions 9, 12, and 15 of the survey instrument collected data on this question. Figure 7, below, provides a visual representation of the themes identified within the answers to Research Question 2.

Figure 7. Research Question 2 Themes



The major themes identified through the analysis of questions supporting Research Question 2 echoed some of the themes of Research Question 1. The research question asks the participants to identify the role of local government within the first 72-hours following the landfall of a major hurricane. Survey respondents ranged in responses and echoed the frustrations of the issues encountered during immediate hurricane recovery. The themes of 1) Absences of Government Services 2) Communication Improvement 3) Proactive Law Enforcement 4) Government Services Maximized and 5) Food and Water Distribution appeared in both Research Question 1 and 2. Table 9 below compares the number of respondents associated with the duplicated themes.

*Table 9. Comparative Theme Identification: Research Question 1 and 2*

Theme	Respondents R1	Respondents R2
Absences of Government Services	55	46
Communication Improvement	51	42
Proactive Law Enforcement	8	18
Government Services Maximized	24	14
Food and Water Distribution	55	9

A comparison of the duplicated themes between the two research questions reveals similar sentiments among the perception of survey participants. Survey participants answers comprising the first four themes identified in Table 9 closely resembled each other within the two research questions with an average 13% deviation within the summation of answers of the two questions. A significant variation presented itself with the theme of Food and Water Distribution where 55 of the respondents cited the distribution of food and water as a significant part of governmental pre-storm preparation compared to 9 participants stating local government having a role in food and distribution within the first 72-hours after the landfall of Hurricane Michael.

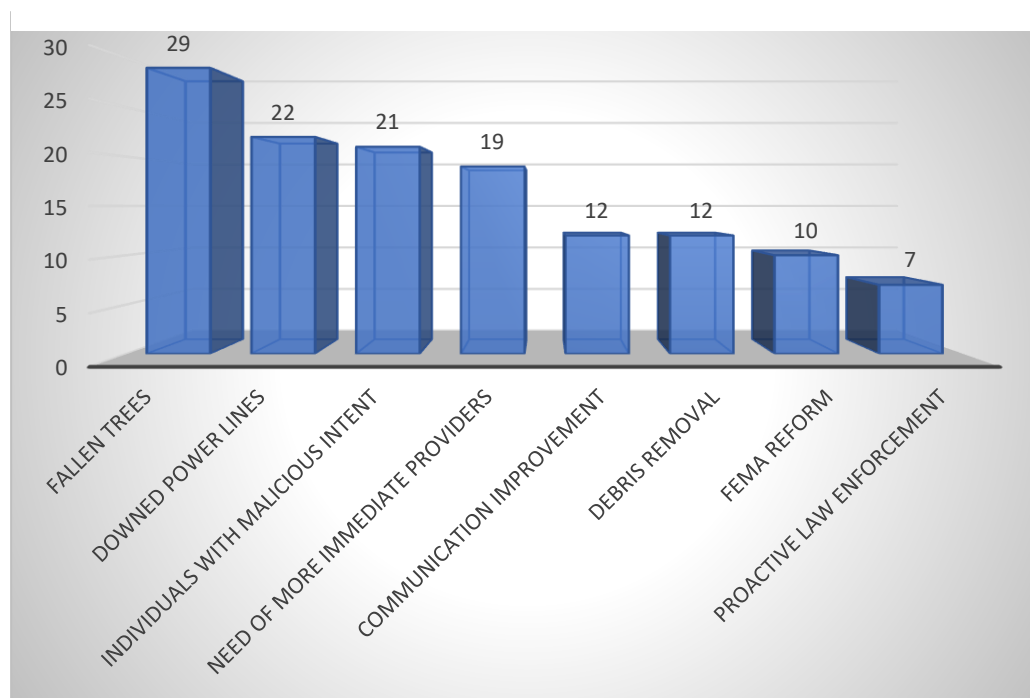
The theme of the need for more immediate providers surfaced through the questions supporting Research Question 2. Forty of the survey takers indicated the request of more immediate responders into hurricane ravished areas is a role of local government within the first 72-hours of hurricane landfall. The consensus among the contributors to the theme is more immediate responders would free local law enforcement enabling them to perform more proactive law enforcement in support of hurricane victim recovery.



Two minor themes emerged in the questions supporting Research Question 2. Eight of the survey participants stated the role of local government within the first 72-hours was to collaborate with other agencies in the distribution of duties to support hurricane recovery. Eight other individuals voiced their perception of the role of local government within the first 72-hours of hurricane landfall is to provide shelter for those who lost their homes.

**Research Question 3.** Research Question 3 asked, “What does the public view as being the most hazardous situation occurring as a result of a hurricane?” The design of Questions 10 and 13 of the survey collected data on this question. Figure 8 provides a summary of the themes identified for Research Question 3.

*Figure 8. Research Question 3 Themes*



Themes identified for Research Question 3 are the result of the answers provided to survey questions 10 and 13. Survey Question 10 asks the participant to share their perceptions of the role of federal government in the assistance to local communities as part of the recovery

process. Question 13 directly asks participants to impart their perception of the most hazardous situation they encountered because of Hurricane Michael.

Survey Question 10 asked survey takers to provide direct answers to the question resulting in the themes of fallen trees, downed power lines, and individuals with malicious intent as the most hazardous situation encountered because of Hurricane Michael. Ten of the survey responders indicated the complexity of navigating the rules and requirements of FEMA in receiving aid in the form of shelter or financial assistance as the most hazardous situation encountered as they could not meet the agency's requirements due to the destruction of their homes. The remaining themes within Research Question 3 echoed similar perceptions identified in Research Question 1 and 2. The identified triplicate themes are as follows: 1) Communication improvements and 2) Proactive law enforcement. Table 10 provides a summary of the triplicate themes.

*Table 10. Comparative Theme Identification: Research Question 1, 2, and 3*

Theme	Respondents R1	Respondents R2	Respondents R3
Communication Improvement	51	42	12
Proactive Law Enforcement	8	18	7

### **Summary**

Chapter 4 presented an analysis of data collected from an anonymous online survey seeking to identify previously unknown phenomena impeding immediate responders from conducting critical hurricane recovery efforts. The survey provided exploration of the perceptions of the survivors of Hurricane Michael to expose the gaps in the existing administration of the post-recovery procedures. The guidance of the process of data collection

was governed by the research methodology as outlined within Chapter 3 of this study. The goal of the research was achieved by identifying the public perception of the roles of the local, state, and federal government in the immediate needs of a community following a major hurricane.

The survey structure was designed to encourage participants to provide detailed, information-rich responses by using several different data collection techniques and open-ended questions. The themes identified as a result of these responses included pre-storm planning and preparation, roles of local government in the storm's aftermath, and involvement of federal government as a measure of additional relief to hurricane survivors.

Laakso and Palomäki (2013) argued pre-planning for community recovery of disastrous weather events requires the governmental leadership to review lessons-learned from past weather events to understand what happened, what is likely to happen, and the possibility of compounding disaster components. The uniqueness of crisis leadership resides in ability of state and local government entities to relinquish control of the crisis to agencies better suited to provide relief as the immediate scope of the event exceeds local government's ability to provide adequate immediate recovery (Bauman, 2011; Hurley, 2019; Naim & Montgomery, 2006; Olejarski, & Garnett, 2010). Hurley (2011), Kahn and Barondess (2008), and Kapucu (2008) concluded the level of preparation a community completes prior to a storm determines the ability of government leaders to provide adequate recovery service in the aftermath of a major hurricane. Community leaders can minimize the suffering of hurricane victims by providing pre-storm preparations and having a plan for the immediate recovery in the storm's aftermath (Curry, 2011).

## Chapter 5: Implications, Recommendations, and Conclusions

The problem addressed in this exploratory qualitative study examined the public perception of the questionability of government decision-making as it relates to the immediate recovery process of a major hurricane. Government's ability to respond rapidly in the aftermath of a major hurricane is critical to reduce the hardships of hurricane survivors (Harris, 2018; Holguín-Veras et al., 2014). Lindner and Crockcroft (2013) reasoned public perception in the immediate hours and days following the land fall of a major hurricane served as the driving force in the design and implementation of policy decision-making. Bowser and Cutter (2015), Koslov et al. (2021), Holguin- Anderle et al. (2009) and Burby (2006) noted that the failure of governmental authorities to make timely decisions in their pre-planning efforts and in the aftermath of a major hurricane contributed to compounding disaster components that prolonged the disaster recovery process. Several researchers suggested immediate recovery from a major storm remained an understudied element despite the humanitarian hardships suffered by the public and the financial burden that becomes the responsibility of the rest of the nation (Deryugina, Kawano, & Levitt, 2018; Dunning, 2020; Khalid & Yousaf, 2020; Kousky, 2013; Lee, 2021; Wang & Paul, 2020).

Burstein (2003) suggested public perception in the determination of the success of government policies as the most salient issue influencing the formulation of public policy. The relationship of the importance of the policy as it relates to its impact on the public directly correlates to the strength of the perception-policy relationship (Burstein, 2003). Many community leaders have adopted the theory that the first 72 hours following a storm remains the responsibility of the individual as an unofficial policy and have promoted the slogan to the public

for decades (Batten, 2019; Collier, 2021). The increase in population densities along coastal communities combined with the size and intensity of a major hurricane can extend the immediate recovery period far beyond the initial 72 hours rule (America, 2017; Batten, 2019). Absent any contemporary comprehensive linear studies concentrated on immediate recovery efforts, a systematic understanding of the public's opinions as related to the ability of government to provide immediate recovery services will provide an underpinning for planners to consider in pre-hurricane policy formulation.

The nature of the study was exploratory and best utilized a qualitative research methodology to formulate conclusions and recommendations. Rob Coppock (1977) identified the perception of the public towards policy formulation as the most important element in policy decision-making. Borrego et al. (2009) noted exploratory research required a qualitative approach to interpreting a phenomenon as we are investigating the “how” and “why” the phenomena occurred in terms of an unquantifiable societal understanding of the problem (Borrego et al., 2009). Researchers used exploratory research to gain fresh perspectives with an existing phenomenon to gain understanding of why a problem exists (Swedberg, 2020). Bhasin (2020) argued exploratory research as the most reliable method of study when exposing under-investigated problems where not much information is available. Bhasin (2020) discussed the purpose of exploratory research as “to develop more understanding about the problem” (n.p.) where the outcome of the research may provide no clear conclusive outcome.

The study exposed the perceptions and opinions of the of survivors of Hurricane Michael toward leadership decision-making in the immediate aftermath of the storm. The study ensured a degree of validity in survey responses by making the survey anonymous and use of open-ended questions to guarantee an uninhibited, unrestricted, and unbiased environment for participants to

answer survey questions. Salmons (2014) noted survey participants potentially subject themselves to risk through social or political ridicule from others if no guarantee of anonymity existed for survey participants. The design of the survey mitigated any risk to survey participants should the data become compromised by outside sources by not collecting and personal information that would disclose source identity. The survey did not solicit any personal information that would compromise the privacy or anonymity of the participants.

Survey Monkey served as the source of the survey instrument and data collection. Survey Monkey stated data collected through their site is protect by the second generation of Systems and Organizations Controls (SOC) through accredited data centers operating under the best practices of security and technical experts. The site guaranteed user protections in the collection of transmitted data through a secure and encrypted internet connection using Transport Layered Security (TLS) to protect login information and survey answers (Survey Monkey, 2022).

The social media sites of Facebook and Instagram served as the advertising source soliciting survey candidates within the Bay County, Florida geographical area. Survey candidates landed on the survey's Informed Consent page upon clicking the on-line advertisement. The Informed Consent Form presented inclusion and exclusion criteria to the viewer and required the survey candidate to acknowledge the survey terms prior to moving forward. The first three questions of the survey reiterated the exclusion criteria and directly asked the survey candidate to confirm 1) they lived through Hurricane Michael and its immediate recovery 2) over 18 years of age at the time of the event and 3) not part of government leadership at the time of the storm. The exclusion of government leaders, including first responders, protected the integrity of the survey by excluding professional bias from the survey data collection.

The advertising on social media platforms was conducted during the period of April 27, 2022 through May 03, 2022. A reciprocal agreement between Facebook and Instagram allowed for the creation of a single ad campaign to manage advertising for each social media platform. The advertisement range established the geographical limitations within a 20-mile diameter from the epicenter of Panama City Florida. The range selected included the hardest hit areas of Bay County to include Mexico Beach, Tyndall Air Force Base, the Cities of Callaway, Parker, Lynn Haven, Panama City, Panama City Beach, Youngstown, and a significant portion of the rural county. Facebook estimated audience size ranged between 137,000 to 161, 200. The population of the county at the time of impact of Hurricane Michael exceeded 174,000 people (Census, 2022). A total of 508 individuals clicked the advertisement and visited the first page of the survey, the Informed Consent Form. A total of 258 individuals agreed to the conditions of the Informed Consent Form with 100 individuals completing the survey.

Research included constant review and observation of the survey results as collection of source data began. The first five survey participants were isolated and reviewed as a pilot study to ensure the answers to the survey questions were clear and understood by survey participants and produced answers in-line with researcher expectations. A review of the results of the five-member pilot test met the conditions to allow the survey to run unabated until achievement of data saturation or data redundancy.

Two possible limitations of the study were the structure of the questions and the participants involved. To overcome any limitations related to the structure of the questionnaire, all questions were open ended and structured in such a manner that the respondents did not feel obligated to answer in any specific manner. Survey participants had the option to complete the survey at a time suitable to their schedule and in a comfortable setting of their choice free from

outside influences. The survey overcame the challenge of the limitation on participants by excluding government leadership and emergency operations personnel from completing the survey. The exclusion of these individuals provided a degree of validity by prohibiting professional bias from entering the raw data.

Raw data collected through the survey instrument underwent coding by hand and then analyzed with the qualitative software NVivo to identify existing themes as they evolved. All forms of documented communication and data collected from the study shall remain on an encrypted USB flash drive secured in a lockbox in the researcher's personal possession for a period of three years. The researcher will destroy the contents of the USB Flash drive at the conclusion of the three-year period.

This chapter has been organized into three different sections: implications of the research, recommendations identified as a result of the research findings, and conclusions based on the research.

### **Implications**

Sledge and Thomas (2021) noted that public perception of the role of government when responding to crisis situations is critical because these perceptions help shape interactions between state and society. Sledge and Thomas (2021) continued to state the perceptions of the public help influence government action when engaging in activities requiring varied levels of trust in government agencies when tasked with confronting crises. Baumgartner & Jones (2010), Birkland (1997), and Ono (2017) considered public perceptions as a method of assisting government to underpin the strength of existing policy subsystems or to foster a context in which policy change might occur. Identification of these perceptions is essential in designing,



implementing, and reconsidering public policies aimed at addressing threats to the public (Keller et al., 2012; Kenis et al., 2019; Kuipers et al. 2017; Walsh et al., 2015).

To understand the public's perceptions better, the research involved an examination of the opinions of survivors of Hurricane Michael with their experience with governmental decision-making in the pre-planning and immediate aftermath of a major hurricane. Research questions provided below.

Q1: What issues warrant consideration by local governments when preparing for a hurricane to make landfall?

Q2: What is the role of the local government in the first 72 hours following a hurricane landfall?

Q3: What does the public view as being the most hazardous situation occurring as a result of a hurricane?

Research questions were based on the examination of previous literature as contained in the Literature review. The research questions guided the research methodology.

**Research Question 1.** Research Question 1 was based on the issues identified by Curry (2011), Hurley (2011), Kahn and Barondess (2008), and Kapucu (2008). Researchers suggested local government leaders have the capability to minimize the challenges of recovery of hurricane victims by providing constant review of pre-storm preparations, adapting plans to changes in technology, adapt lessons learned from previous major storms, and having a modern updated plan for the immediate recovery in the storm's aftermath. Ernest et al. (2017), Webb and Chevreau (2006), and Quinn et al. (2019) suggested the key to preparing a crisis management

plan is for local governments to acknowledge not one single plan is applicable in all situations and that flexibility is a necessary component for success.

Ninety-nine percent of survey takers answered Question 8 with multiple participants providing numerous comments within their answers which contributed to the analysis of multiple themes. Ten of the survey participants answered the question but failed to provide meaningful data for analysis. For example, participant #1 answered the question with the comment, “It was rough.” One survey participant left the answer blank. A review of the remaining data collected from the answers to Question 8 revealed three separate themes relating to the perception of the challenges encountered by the public in the aftermath of Hurricane Michael. Themes identified through Question 8 included: 1) Food and Water Distribution 2) Electrical Power, and 3) Improvements in Communication. The challenges identified by the survey participants within the answers to Question 8 reflect essential issues local government leaders can take into consideration in their preparation planning for future hurricanes (Laakso & Palomäki, 2013; Liu & Huang, 2014). Table 1 provided a summarization of the three major themes identified as part of Question 8.

Sixty-two percent of survey participants mentioned the distribution of food and water as part of their survey answer. Further analysis of the theme revealed 20% of the participants had no knowledge of how to obtain food and potable water after the storm, 40% of the participants experienced challenges in the accessibility to food distribution sites, and 40% experienced a shortage of their preplanned food supplies with no ability or knowledge of how to replenish their shelves. The theme of Food and Water Distribution has a direct correlation with the two other major themes identified within the answer to Question 8 as a lack of electrical power contributed

to the lack of communication which contributed to the lack of information about finding food distribution sites in the immediate days following the landfall of Hurricane Michael.

Popke and Harrison (2018) noted the social-ecological relationship required to restore electrical services after a major hurricane contributes to the restoration of the collective quality of life. Survey participants exposed the need of electricity as a major theme within the answer to Question 8. Fifty-seven percent of the survey respondents cited the absence of electrical service as a major challenge in the aftermath of Hurricane Michael. The absence of electricity contributes to the deprivation of basic amenities of modern life such as air condition and refrigeration (Hinrichsen, 1999; Robles, 2018). Survey participants agreed the critical nature of the utility prompts government planners to consider electricity restoration as a first step in the recovery process.

The need of improved communications surfaced as a significant theme within the answers to Question 8. Drabek and McEntire (2002) and Quarantelli (2000) noted communicative services is critical in the restoration of civility back to disaster-stricken areas. Forty percent of the survey participants provided answers citing the need of communication was a major challenge they faced because of Hurricane Michael. The participants comprising the theme of Improved Communications split their responses into two separate categories: 1) Communication of Information and 2) Communication for Personal Use.

Twenty-eight percent of the participants comprising this theme cited the inability of local government to disseminate critical information in the wake of Hurricane Michael was a major challenge they encounter. Critical information such as road closures and opening, location of food distribution sites, availability to medical services, news, and information on infrastructure repairs were limited or non-existent. Other critical information such as the opening of private

business sites that serve the public needs such as gasoline stations, grocery stores, pharmacies, and other government or business services were also unknown as no means to communicate information existed.

Seventy-two percent of the respondents within this theme mentioned the lack of ability to communicate with people outside of the impacted area of Hurricane Michael as a major challenge they encounter in hurricane recovery. Communication with family members inside or outside of Bay County to relay the status of survivor safety and living conditions comprised 76% of the answers. Survey respondents, 24%, within this theme cited the need to communicate and arrange restoration needs with insurance companies, banks, contractors, and other sources outside the devastated area as a major hurdle they encountered resulting from the landfall of the hurricane.

The research uncovered other lesser themes within the answer to Question 8. The research did not include these lesser themes as part of the analysis of the question. These lesser themes included shelter, looters, contractor fraud, and debris removal as challenges encountered as part of hurricane recovery. The relative few responses raising lesser themes appeared within the survey answers but not significant enough to warrant analysis within the research.

Question Number 11 supported Research Question 1 by directly soliciting the perception of the public on the best services provided by government entities in the wake of Hurricane Michael. The question did not limit the respondent to one level of government. Rather, the question sought to unearth the best government aid received by hurricane survivors without consideration for whether service came from local, state, or federal sources. The survey question supports the research question by exposing services that best aided hurricane survivors so local planners may consider these services in pre-storm planning. The answers to Question 11

provided three separate themes: 1) absence of government services, 2) debris removal, and 3) proactive law enforcement. Table 2 provided a summation of the themes and number of responses.

Ninety-one percent of survey respondents answered Question 11 with nine of the survey participants declining to provide an answer. Fifteen percent of the answers to the survey question voiced their perception of the best aide coming from non-governmental organizations such as churches, charities, and the American Red Cross. Sixty percent of the survey answers indicated they did not receive any services from government entities. The combination of the answers of “none” and “NGO” provided the basis of the theme “Absence of Government Service.”

Cook (2009) noted the clearing of debris from roadways to allow emergency relief workers and humanitarian aid to reach hurricane victims is a priority local officials should consider in their pre-storm preparations and planning. The theme of “Debris Removal” surfaced in 30% of survey participant’s answers to Question 11. Survey respondents cited fallen trees and debris from destroyed structures littered the roadways prohibiting transportation of first responders or prohibiting hurricane victims from leaving their homes to seek assistance.

Question 11 produced a third theme of “Proactive Law Enforcement.” Eight of the survey participants noted the efforts of law enforcement to ward away looters in the form of having a law enforcement presence in the areas hit the hardest by Hurricane Michael as the best aide provided by government services. Lesser themes emerge within the answers to Question 11 such as the distribution of blue tarps for roof covering and funding in the form of low interest loans for home repairs as the best aide from government entities.

The wording of Question 14 required individuals to reflect on their own individual preparation efforts for the landfall of Hurricane Michael. The question solicited perceptions of the impacted public to what individual efforts needed improving. The answers give local government insight into how to better serve their public in storm preparation. Birkland (2006), Renda-Tanali (2020). Rouhanizadeh, Kermanshachi, and Nipa (2020) and Holguín-Veras et al. (2014) noted the better a person is prepared for the landfall of a major hurricane the less time the person will spend in recovery efforts. Ninety-five of the survey participants provided answers to this question but few provided answers of what a person could have done personally to prepare for the storm. The question garnered responses producing three themes 1) Improved Storm Forecasting 2) Need for Portable Electricity and 3) Individual Preparations Maximized.

A small number of respondents, representing 13% of the survey takers, produced the theme of improved storm forecasting as a need to better assist in their individual hurricane preparations. Nearly half of those individuals comprising the theme stated they would have evacuated if forecasting of the storm's intensity would have been accurate. Nineteen percent of survey responses indicated they could have better prepared for the storm by purchasing or having portable electricity in the form of generators available with sufficient gasoline supply to last until the restoration of electricity could be achieved. A majority of survey respondents, 25% in total, indicated they were as adequately prepared for the storm as they could individually achieve. The consensus among these individuals is they maximized their individual efforts, but no level of individual preparations can adequately prepare you for a Category 5 hurricane. Other themes of lesser significance appeared within the answers to Question 14. These themes included stocking of food and water, more cash money on hand, and the purchase of tools to assist in debris removal.

**Research Question 2.** Research Question 2 was based on the issues identified by Col (2007), Dourandish et al. (2012), Zumel and Manno (2007), and Harris et al. (2018). Survey Questions 9, 12, and 15 addressed the issue of the 72-hour window following the landfall of a major hurricane and attempts to identify the perception of the public regarding the varied roles of government entities within the time frame of immediate recovery. One hundred percent of survey participants answered Survey Question 9 which asked the survey taker to identify how government assisted them within the first 72-hours after the landfall of Hurricane Michael.

Survey Questions 12 and 15 had a lesser response rate with 89% of survey takers answering each of the questions. The analysis of these three survey questions produced eight themes within the cumulative answers to the questions. The three themes of absence of government services, communication improvement, and the need for more immediate responders appeared as major themes within the analysis of data.

Five other themes surfaced but with significantly fewer respondents. The survey produced lesser themes but with significance to local government's pre-planning and execution of immediate recovery. The five lesser themes identified as part of Research Question 2 included proactive law enforcement, maximization of government services, food and water distribution, collaborative planning, and emergency shelter. Figure 6 provided a summary of the major and lesser themes identified through the analysis of survey participant's answers.

Fifty-three percent of survey takers perceived government as being absent within the first 72-hours after the landfall of Hurricane Michael. The theme Absence of Government Service surfaced through the answers to Survey Question 9 which solicited survey takers perception of the best aid they received from government after the landfall of Hurricane Michael. The 53% comprising this theme were highly critical of government services and voiced their disapproval

of the lack of government services within the survey's answers going far beyond the scope of the question.

The need of better communication as a perceived duty of local government revealed itself as a major theme within Survey Questions 12 and 15. The culmination of the raw data within the two questions produced the theme and represented 47% of the answers within the two survey questions. As mentioned in the previous paragraphs, the need to disseminate emergency information within the hurricane-stricken area and the ability to communicate with people outside the impacted area is critical in the immediate recovery efforts for both the immediate responders and the individual survivors (Drabek & McEntire, 2002; Rojek & Smith, 2007; Quarantelli, 2000).

The last major theme revealed through the analysis of the raw data for the three survey questions supporting Research Question 2 revealed the need for more immediate responders. The theme of an increase in immediate responders has its foundation in the answers to Survey Question 15. Survey Question 15 is a forward-looking statement soliciting the perception and opinions of the survivors of Hurricane Michael to reveal best practices adoptable by local government in future pre-planning preparations. The survey participants answered the question with 25% stating local government having a need to prepare for a storm by requesting more immediate responders to support immediate hurricane recovery.

**Research Question 3.** Research Question 3 examines the thoughts and perceptions of hurricane survivors in identifying the most hazardous situation they encountered as part of their Hurricane Michael experience. Research Question 3 has its foundation in the issues identified in the research explored by Biedrzycki and Koltun (2012) and Willison et al. (2019). Identification of the most hazardous situations experienced by hurricane survivors provides planners with



knowledge of how to mitigate these situations prior to their occurrence. Survey Questions 10 and 13 support Research Question 3.

Survey Question 10 seeks the opinions of hurricane survivors as to what federal government could do to assist in reducing the amount of time necessary in immediate recovery efforts. The survey question relates back to the research question as involvement of federal government in local issues becomes warranted when the local situation impacts the remainder of the United States (Biedrzycki & Koltun, 2012, Willison et al., 2019). The destruction brought forward by a major hurricane burdens the remainder of the nation through a direct impact to the nation's economic markets and ultimately creating instability within the financial indices (Hurley, 2019; Manning, 2020; Motavesseli & Hajialiakbari, 2017; Prewitt et al., 2011; Quarantelli, 2000).

Ninety-eight percent of the survey respondents provided answers to Survey Question 10 with the perceptions and opinions of the impacted public producing five major themes. Major themes identified in Survey Question 10 included 1) communication improvements 2) debris removal 3) FEMA reform 4) more immediate responders and 5) proactive law enforcement. Table 7 provided a summary of the major themes identified through the answers to the survey question.

Analysis of the answers to the question brought forward four themes previously identified and discussed in prior paragraphs of this chapter 1) communication improvements 2) debris removal 3) more immediate providers and 4) proactive law enforcement. The remaining theme of FEMA Reform appeared as new major theme within the question. Thirteen percent of survey answers within Question 10 cited complications and bureaucratic red tape within the federal loan process as hindrances in achieving expedient recovery. The participants comprising the theme of

FEMA Reform expanded on the original question by providing a response for short-term recovery through financial assistance vice the original question of how federal government may assist in immediate recovery.

Survey Question 13 left little room for ambiguity by requesting survey participants to directly reflect and identify their perception of the most hazardous situation encountered resulting from the landfall of Hurricane Michael. The question directly supports the research question as it is almost identical to the wording of Research Question 3 but specific to Hurricane Michael. Two of the survey takers elected to not answer the question and left it blank. Three survey takers provided short answers that did not directly answer the question presented but rather vented frustration of government in general. The remaining 95% of survey participants answered the question resulting in three major themes 1) Down Power Lines 2) Fallen Trees and 3) Individuals with Malicious Intent.

The two themes of Downed Power Lines and Fallen Trees are self-explanatory as to the hazards they created limiting electricity and prohibiting travel to and from the individual's residence. The third theme of Individuals with Malicious Intent comprised 22% of the survey answers. Survey participants cited protecting their property from looters, dealing with unscrupulous contractors, dishonest claims adjusters, and other unsavory individuals as their most hazardous situation experienced during Hurricane Michael. Lesser themes identified within the answers to Question 13 included wind damage, flying debris, traffic, and the fear of being forgotten by the rest of the nation.

**Summation of Raw Data.** The analysis of the summation of the raw data produced two common themes among all three research questions: 1) Communication Improvement and 2) Proactive Law enforcement. A deeper analysis of the raw data necessitated summarizing

duplicate and triplicate themes and their number of responses into a single table for clarity. Table 11 list all major themes across research questions, sums the number of responses, and then sorts the themes by the most frequent themes responses.

*Table 11. Summation of Themes Across Research Questions*

<b>Major Theme</b>	<b>Responses</b>		<b>Major Theme</b>	<b>Responses</b>
Communication Improvement	108		Downed Power Lines	22
Absence of Government Services	101		Individuals with Malicious Intent	21
Food and Water Distribution	64		Need of Portable Electricity	18
Need of More Immediate Providers	59		Government Services Maximized	14
Electrical Power	45		Improved Storm Forecasting	12
Debris Removal	39		FEMA Reform	10
Proactive Law Enforcement	33		Emergency Shelter	8
Fallen Trees	29		Collaborative Prior Planning	8
Individual Preparations Maximized	24			

The two common themes appearing in all three research questions provide insight to perceptions of hurricane survivors on the issues they believe carry significance for local government to consider in minimizing the suffering of hurricane survivors experiencing immediate recovery. The theme of Communication Improvement appeared in all three research questions as well as ranking as the number one theme in the summation analysis of Table 11. Communication of critical restoration information by emergency personnel to hurricane survivors and the ability of the survivors to communicate with areas outside the landfall area of Hurricane Michael appeared more often than any other theme identified through the analysis.

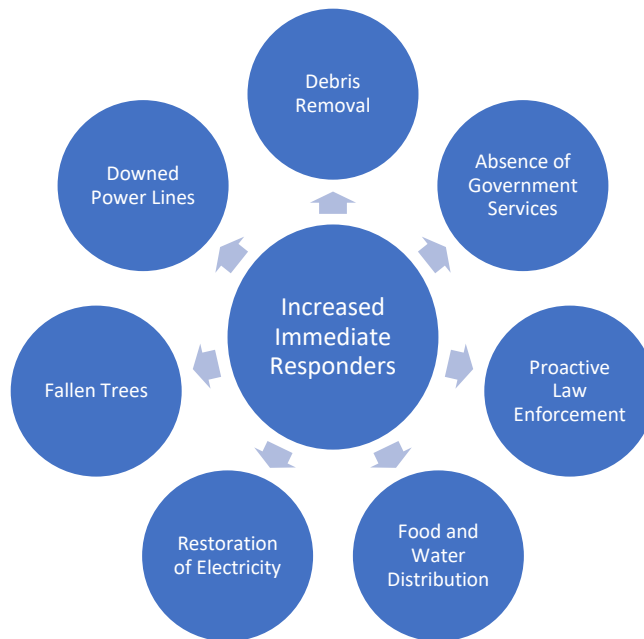
The survey questions produced a second theme that recurred in all three research questions. The second triplicate theme suggested the achievement of the minimization of immediate recovery required increased proactive law enforcement to protect survivors from unscrupulous actors seeking to take advantage of a vulnerable population. An analysis of the frequency count of the summation of themes ranked Proactive Law Enforcement as the sixth most frequently cited theme within the answers to the survey questions across all three research questions.

The second most frequent theme cited within the summation of themes indicated the Absence of Government Services as the second most cited issue among survey takers. The theme surfaced in Research Question 1 and Research Question 2 as part of the 101 responses. The perception of the people comprising the theme indicated either they did not see any government services during immediate recovery, or their recovery experience was through NGO assistance with no government assistance available. The perception of a lack of government services combined with a lack of communication contributed to the third most frequently cited theme of Food and Water Distribution as hurricane survivors had no means to know the availability of government services or location of food distribution sites.

The fourth most frequently cited major theme revealed the perception of an increase in the number of immediate responders will translate into decreased suffering and minimize recovery time. Survey takers indicated an increase in the number of immediate responders would drive down immediate recovery time and minimize issues identified as part of the recovery efforts. Increased immediate responders would impact multiple areas of hurricane recovery by aiding in areas where local responders became overwhelmed or unable to assist due to the issues

associated with the landfall of a major hurricane. Figure 9 below shows the interrelationship of the theme Increased Immediate Providers to other thematic areas.

*Figure 9. Impact Areas of Increased Immediate Responders*



### **Recommendations**

The qualitative research conducted for this study resulted in the identification of the perceptions and opinions of a segment of the population of Bay County, FL that lived through the experience of Hurricane Michael and its immediate recovery. The data collected revealed the public perception of the effectiveness or ineffectiveness of government entities in providing immediate emergency services and exposed areas the need closer prioritization by local leaders. The study exposed the frustration and limitations experienced by survivors of major hurricanes in the immediate process of restoring their homes and communities back to normal operational condition. The following recommendations are based on the findings within this study:

**Continuous Pre-storm Collaborative Planning.** Anderle et al. (2009) and Burby (2006) provided the inability of government authorities to provide adequate decision-making in the preparation of landfall of a major hurricane and instability in government decision-making in the wake of a storm contributed to compounding disaster components that prolonged the immediate disaster recovery process. Hayward (2011) reviewed the phenomena and concluded the lack of pre-storm education among governing officials is directly attributable to the ineptness of immediate response efforts. The failure of government to provide effective assistance to the victims of a major hurricane through the recovery process is directly contributable to the lack of development of a clear plan involving multiple levels of government missions (Bava et al., 2010; Ernest, Mladenow, & Strauss, 2017; Joint Effort, 2011; Kapucu, 2008; Kapucu & Garayev, 2013; Pathak, & Ganapati, 2020; Waugh, William & Streib. 2006).

Leadership within a community experience change based on political cycles and the opinion of the voting public. Administrators remain in their position and are the more likely to be the individuals trained in the availability of assets and resources provided by state and federal authorities to aid in hurricane recovery. State authorities have a responsibility to provide annual training on disaster management where emergency responders can learn about in advancements in technology and updates on federal legislative initiatives supporting emergency recovery. Local government leaders need access to an annual pre-storm leadership training program that directly identifies government leadership roles in hurricane recovery.

FEMA, operating as the federal coordinator of emergency services, has a responsibility to provide the training to state and local level emergency responder leadership as well as government leadership. The FEMA Emergency Management Institute offers multiple courses in emergency management with the flexibility to provide training at their facility located in

Emmitsburg, Maryland or outside the training facility at a location suitable to the personnel targeted for training. FEMA has the capability of offering yearly regional training in the form of conventions with breakout sessions providing updated information in the specific areas of concern of local leaders.

**Pre-storm Public Education Campaign.** Survey participant #35 summed the motivation behind this recommendation sufficiently, “Everyone told me how to prepare for the storm. Nobody told me what to expect after the storm.” Pre-storm education of the public has previously dominated the media landscape by providing public service announcements on how to prepare yourself for the landfall of a major hurricane. Local authorities and media leaders provided very little educational information as to what to expect after the storm moves through the area.

Dourandish, Zumel, and Manno (2007) noted services traditionally provided by local governments may not be available within the first 72-hours following a hurricane. Hurricane survivors are limited to their personal pre-storm preparations to see them through the first few days of recovery. Collier County, Florida publicly adopted the slogan, “The first 72 are up to you.” (Collier, 2021. n.p.) which openly warns potential non-evacuees of hardship they may face in the immediate days following a hurricane. Media outlets adequately broadcast public service announcements to inform citizen of how to prepare for a storm, but media outlets provide little attention to what to expect after the storm has moved through the area.

Local authorities and news media outlets neglect to inform potential hurricane survivors of the hardships to expect in the aftermath of a major hurricane which factor into the personal decision to either evacuate the area or stay and ride-out the storm. Local authorities have the responsibility to adequately provide citizens with the information and plans for placement of

emergency services such as food and water distribution sites or locations for medical services prior to the storm's arrival. Additionally, local media should broadcast the possibility of dealing with adverse situations such as looters, insurance company regulations, unscrupulous contractors, overly anxious public adjusters, and other unsavory actors looking to capitalize on a vulnerable population.

**Communication Improvements.** The study uncovered a very clear theme among survey participants where a lack of communication contributed to the anguish experienced by the hurricane survivors. Research analysis of the raw data received through the survey process revealed the theme of communication improvement in all three of the research questions as well as being the number one issue mentioned within the word frequency count, see Table 10 and Table 11. The importance of the ability to communicate ranked as the most important issue among the perception of survey takers in assisting in the process of immediate recovery from the landfall of a major hurricane.

Advancements in technology have brought the field of communication to limits once believed unachievable into reality and become commonplace in the administration of daily live activities. The Pew Research Center (2021) reported 97% of all Americans own a cellular device. Addeo et al. (2019) noted computer mediated communication (CMC) has become an integral part of everyday life where people world-wide commonly use social networks, blogs, chat rooms, and other online channels as a means of entertainment and to share their opinions, ideas, and educate themselves on issues. The ability of local government to communicate with its constituency has evolved overtime to where the traditional means of communicative information sharing through television or radio have become antiquated and substituted by the popularity of CMC devices which require access to the internet to function.



The application of communicative services remains in the control of private industry with government acting as a regulatory body to ensure the needs of the community are not truncated for corporate materialism. The cellular service giant Verizon reported corporate earnings in excess of \$133 billion dollars for fiscal year 2021 with a reported Net Income of over \$22 billion (Verizon, 2022). Corporate profits continue to increase with little government intrusion into how these companies can support the communities they depend upon for their livelihood. State level legislative initiatives may require these corporate giants to produce communicative services in the form of mobile towers employing the latest in communication technology to provide free services to adequately cover the area made inaccessible by damage created by the hurricane.

**Increased Manpower.** The second triplicate theme appearing in all three research questions indicated proactive law enforcement as a method of reducing the hardships brought about from the landfall of a major hurricane. The theme appeared as the 7th most cited theme within the frequency count of themes across research questions. The ability to increase proactive law enforcement requires an influx of manpower made available from a collection of sources such as law enforcement personnel from the outside area, National Guard, and federal military troops. Subsequently, the increase in manpower can have a multiplier effect that minimizes the other hurricane hazards identified in Figure 8.

Governors maintain the authority to mobilize state resources such as state law enforcement and National Guard troops. Challenges exist in deployment of these assets as they draw from other areas of the state prohibiting effective law enforcement in areas outside of the hurricane landfall. The use of National Guard troops remains as an option for additional manpower but comes with the complications. The National Guard are citizen soldiers who must give up civilian jobs and time from families to help with hurricane recovery. Additionally, the

mobilization of National Guard units to assist regular army in their missions overseas removes specific units from hurricane recovery efforts. The use of active-duty military remains an option but only used in specific capacities identified within the framework of constitutional requirements limiting the use of federal troops in law enforcement activities.

The legal authority authorizing the use of active-duty military personnel in domestic situations is the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act, 42 U.S.C. §§5121, et seq.). The Stafford Act allows the President of the United States to make available federal resources to aid local and state authorities in dealing with the recovery from a man-made or natural disaster (Bea, 2010). The Act provided the statutory authority for the use of military troops for the purpose of domestic disaster relief without violating the Posse Comitatus Act (PCA). In the situation where a natural disaster creates a decline of civil law and order, the use of active-duty troops is acceptable for humanitarian relief missions. Local and state authorities must maintain the duties of law enforcement. Federal military working as part of law enforcement violates the PCA Act (Hammond, 1997). The use of active-duty military would have an ancillary benefit to law enforcement as troops used for humanitarian purposes, such as search and rescue by patrolling hurricane ravaged areas, would also serve as a deterrent for others intent on looting vacant or damaged properties.

The training and skills available by active-duty military personnel are suitable for disaster relief operation. Military skills and resources available as part of the disaster recovery include transportation advantages such as heavy-duty trucks for evacuation, helicopters for reconnaissance and relief distribution, transportation ships for relief supplies, and off-road vehicles to reach areas made inaccessible by the storm. Schrader (1993) noted military troops are trained and have experience in tactics of urban search and rescue, establishment of field or

mobile hospitals, and the latest technology available for surveillance and reconnaissance. The military has the ability to bring the latest in training and modern equipment to the crises situation to establishing communication in disasters (Schrader, 1993).

During a disaster, state and local governments are quick to call for a federal emergency declaration to allow access to the military's help and support. The relative sovereignty of the military brings efficiency within their bureaucratic structure with hierarchical rules assisting with the command, control, and coordination in providing effective responsive actions to critical situations created by the landfall of a major hurricane (Sylves, 2008; US House of Representatives, 2006). Moreover, the military has the resources to assist in the construction of temporary shelter and temporary access to critical infrastructure such as potable water, showers and laundry, and communication infrastructure (Miskel, 2006; Schrader, 1993).

**Linear Research on Immediate Recovery.** Frank (2019), Frodeman (2013), and Grambling (2021) noted a lack of academic studies on the immediate recovery issues from a major hurricane contribute to the complacency of officials in preparing a community for the inevitable disaster. A review of available literature on hurricane recovery nets a plethora of information on long-term recovery and community resilience. However, literature directly addressing methods of decreasing the suffering of hurricane victims during immediate recovery is lacking. Linear research across major hurricanes on the actions of government during the first few days following the landfall of a major hurricane can provide local leaders with best practices to consider in their pre-storm planning and preparations.

## Summary

The destruction brought forward by the landfall of a major hurricane can be unimaginable to those who never experienced a natural disaster. The destruction created by sustained high speed winds combined with hurricane level storm surge can leave a community and their leaders in a state of shock and awe in the aftermath of a major hurricane. Continuous evaluation and annual reevaluation of pre-storm planning and preparations by community leaders and leadership within the emergency management field reduces the trauma of the magnitude of the task of immediate recovery. Emergency managers maintain calmness and initiate the recovery plan to support those in need once the winds and water recede to a safe level for immediate responders to move out into the community.

Education and training of both community responders and the public at large on what to expect in the aftermath of the landfall of a major hurricane can reduce the anguish that accompanies immediate recovery. Communication improvements provide both critical informative news associated with recovery efforts and allows victims to communicate their safety and recovery needs to those outside of the impacted area. The technology surrounding providing immediate cellular services exceeds the capability of state and local governments. Providing emergency cellular services become a corporate responsibility of cellular providers. Legislative initiatives should compel cellular providers to provide free and unrestricted services to those communicatively stranded by the forces of nature.

The most significant assistance that can reduce the suffering of hurricane victims during the stages of immediate recovery is an increase in manpower. Traditional sources of areas to pull additional manpower comes from state level initiatives to employ law enforcement from other areas of the state to include National Guard troops. The Stafford Act provides provisions for

federal resources to include federal military manpower. The conditions of use of military forces in domestic recovery are limited to protect the rights of citizens from federal intrusion as provided by the Constitution of the United States. However, the Stafford Act contains provisions that allow federal and state level administrators flexibility in the application of the law to best fit the situational needs.

Lastly, the need for research into reducing the immediate recovery time people experience in the wake of a major hurricane is paramount but lacking by research communities. Research examining the recovery efforts of one natural disaster provides information on the one situation examined. Lessons learned or recommendations from the study of one situation creates overgeneralization to all other natural disasters. Linear research into the recovery efforts of other storms or natural disaster provide researchers with a broad base of knowledge and increased foundation for solicitation of perceptions and thoughts of those who have experienced major hurricanes in various parts of the Atlantic and Gulf Coasts.

### **Conclusion**

The purpose of this exploratory qualitative study is to identify previously unknown phenomena connected to the immediate recovery of a community and the perceptions of the survivors in the area of landfalling hurricanes. The study examined the questionability of decision-making as it relates to the responsibility of the government in the immediate recovery process of a major hurricane. The study focused on the thoughts, opinions, and perceptions of the survivors of Hurricane Michael as the destruction and anguish brought forward by the Category 5 hurricane remain fresh within the minds of those who experienced the storm.

The study achieved data collection via a survey instrument, Appendix A, administered through the internet and promoted through social media networks such as Facebook and Instagram. The survey remained available to those who experienced Hurricane Michael, were not in governmental leadership position at the time of the storm, and at least 18 years of age at the time of landfall of Hurricane Michael. The survey remained available to the public for 7 days from April 27, 2022 and May 3, 2022. The study researcher examined the first five survey respondent's answers as a pilot to determine if survey participants understood and answered survey question in lines with researcher expectations. The pilot examination resulted in an affirmation of the survey instrument. Therefore, the study continued to the point of achievement of repetitive data saturation.

Analysis of the raw data collected through the survey instrument combined with the information extracted from the Literature Review resulted in the culmination of 17 major themes. A combination of the themes and Literature Review contributed to the conclusion of the final 5 recommendations of 1) continuous pre-storm collaborative planning 2) pre-storm public education campaign 3) improvements in communication 4) increase in manpower and 5) linear research into immediate recovery. The data, themes, and recommendations identified within the study afford emergency managers and community leaders empirical data for their pre-planning and preparation to minimize immediate recovery efforts (Lippert & Anandarajan, 2004). The study produced valuable information for use by academic researchers as a foundation to expand upon and to further study the phenomena to assist community leaders in their efforts to bring civility and normalcy back to areas impacted by a major hurricane (Bowen et al., 2020; Holguín-Veras et al., 2012).

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## **Appendix A: Survey Instrument**

### **Instructions**

You are invited to participate in a research study being conducted for a dissertation at Liberty University in Lynchburg, Virginia. The purpose of this study is to explore public attitudes related the government decision-making in the aftermath of a major hurricane. There is no deception in this study. The study is only interested in your opinions and reflections about your lived experience through Hurricane Michael and the immediate recovery efforts.

Please answer each question in your own words. If you elect not to answer a question, merely leave it blank and move to the next question. If you decide not to complete or submit the survey, merely exit the web site and your answers will not be recorded.

### **Part I: Control Information**

1. Were you over the age of 18 at the time Hurricane Michael made landfall in the county of Bay County, Florida?
2. Did you live in the county of Bay County, Florida at the time of Hurricane Michael's landfall?
3. Were you involved in a governmental leadership position (this includes first responders) in the county of Bay County, Florida prior to or immediately after the landfall of Hurricane Michael?

### **Part II: Demographic Information**

4. What is your ethnicity?
5. What is your race?
6. What is your gender?
7. What is the highest level of education that you have attained?

Part III: Attitudes related to decision-making during hurricane recovery.

8. In your own words, describe the challenges you experienced following the landfall of Hurricane Michael.
9. Based on your experience, describe how government aided you in the first 72 hours after the landfall of Hurricane Michael.
10. In your opinion, how can the federal government assist local communities in the immediate recovery efforts of a major hurricane?
11. Based on your experience, what assistance provided by government entities best aided you in the days immediately following the landfall of Hurricane Michael?
12. Based on your experience, describe how government can better assist the survivors through the first 72 hours following the landfall of a major hurricane.
13. Based on your experience, describe the most hazardous situation you experienced during Hurricane Michael.
14. In your opinion, what could you have done personally to better prepare for the challenges of the immediate recovery of Hurricane Michael?

15. In your opinion, please describe what government services (local, state, or federal) could have operated more efficiently within the first 72 hours following the landfall of Hurricane Michael.

## **Appendix B: Online Informed Consent Form**

### **Exploring Public Perceptions of the Recovery Response as a Result of Hurricane Michael's Landfall**

**Principal Investigator: David Lovett**

#### **Invitation to be Part of a Research Study**

You are invited to participate in a research study. To participate, you must meet the following requirements:

- Have lived in the county of Bay County, Florida at the time of Hurricane Michael's landfall.
- Were at least 18 years of age at the time of Hurricane Michael's landfall in the county of Bay County, Florida.
- Not involved in a governmental leadership position (this includes first responders) prior to or after the landfall of Hurricane Michael in Bay County, Florida.

Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

#### **What is the study about and why is it being done?**

Purpose. The purpose of this study is to explore public opinions related to government's role in the immediate recovery in the after the landfall of a major hurricane. The study is focused on the individual opinions that people have related to governmental decision-making in the days immediately following the landfall of a major hurricane. There is no deception in this study. We are interested in your opinions and reflections about immediate hurricane recovery for scholarly study only. Taking part in this research project is voluntary and anonymous.

#### **What will happen if you take part in this study?**

If you agree to be in this study, you will ask you to do the following:

Complete an online survey composed of open-ended questions related to your opinions related to your experience with immediate hurricane recovery following Hurricane Michael. The estimated time to complete the survey should range between 10 to 15 minutes.

#### **How could you or others benefit from this study?**

Participants should not expect to receive a direct benefit from taking part in this study. No incentives are offered. Benefits to society include providing government leaders insight to the perceptions of average citizen in their response to the need of immediate hurricane recovery. Findings from this study may be used as a foundation to justify further exploration into hurricane recovery and improvements in emergency response to minimize additional suffering of hurricane victims.

#### **What risks might you experience from being in this study?**



The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

<b>How will personal information be protected?</b>
--

The records of this study will be kept private. Research records will be stored securely, and only the researcher[s] will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

Participant responses will be anonymous. You will have the option of providing a telephone number at the end of the survey to be used for any follow-up or clarifying questions as required by the researcher. Your telephone number will not be shared with any other researchers outside this study or used in any other manner other than this academic study. Data collected from the survey will be maintained on an encrypted USB flash drive for a period of three years. The researcher will delete the flash drive data at the end of the three-year period.

<b>Is study participation voluntary?</b>
--

Participation in this study is voluntary and completely anonymous. Your decision whether or not to participate will not affect your current or future relations with Liberty University or XXXXX XXXXXX or Dr. XXXX XXXXX. If you decide to participate, you are free to not answer any question or withdraw at any time prior to submitting the survey.

**What should you do if you decide to withdraw from the study?**

If you choose to withdraw from the study, please exit the survey and close your internet browser.

Your responses will not be recorded or included in the study.

**Whom do you contact if you have questions or concerns about the study?**

The researcher conducting this study is XXXXX XXXXXX. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at xxxxxxxx@liberty.edu. You may also contact the researcher's faculty sponsor, Dr. XXXXXXX XXXXX at xxxxxxxx@liberty.edu.

**Whom do you contact if you have questions about your rights as a research participant?**

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at [irb@liberty.edu](mailto:irb@liberty.edu).

**Your Consent**

Before agreeing to be part of the research, please be sure that you understand what the study is about. You can print a copy of the document for your records. If you have any questions about the study later, you can contact the researcher using the information provided above.

**PROCEED TO SURVEY**



## Appendix C: Proposed Online Media Advertisements

### Facebook

ATTENTION FACEBOOK FRIENDS: I am conducting research as part of the requirements for a Doctor of Public Administration degree at Liberty University. The purpose of this study is to explore public opinions as related to government's role in the immediate recovery after the landfall of a major hurricane. To participate, you must meet the following requirements:

- Have lived in the county of Bay County, Florida at the time of the landfall of Hurricane Michael.
- Were at least 18 years of age at the time of landfall of Hurricane Michael in the county of Bay County, Florida.
- Not involved in a governmental leadership position (this includes first responders) immediately prior to or after the landfall of Hurricane Michael in the county of Bay County, Florida.

Participants will be asked to complete an anonymous online survey, which should take about 15 minutes. If you would like to participate and meet the study criteria, please click the link provided at the end of this post. A consent document will be provided as the first page of the survey. Please review this page, and if you agree to participate, click the "proceed to survey" button at the end. Participants will be allowed to opt out of the anonymous survey at any time if they wish. If you opt out prior to completing the survey, no data will be recorded.

To take the survey, click here: [LINK]

### Google AdWords and local Online News Media

ATTENTION HURRICANE MICHAEL SURVIVORS: I am conducting research as part of the requirements for a Doctor of Public Administration degree at Liberty University. The purpose of this study is to explore public opinions as related to government's role in the immediate recovery after the landfall of a major hurricane. To participate, you must meet the following requirements:

- Have lived in the county of Bay County, Florida at the time of the landfall of Hurricane Michael.
- Were at least 18 years of age at the time of landfall of Hurricane Michael in the county of Bay County, Florida.
- Not involved in a governmental leadership position (this includes first responders) immediately prior to or after the landfall of Hurricane Michael in the county of Bay County, Florida.

Participants will be asked to complete an anonymous online survey, which should take about 15 minutes. If you would like to participate and meet the study criteria, please click the link provided at the end of this post. A consent document will be provided as the first page of the survey. Please review this page, and if you agree to participate, click the “proceed to survey” button at the end. Participants will be allowed to opt out of the anonymous survey at any time if they wish. If you opt out prior to completing the survey, no data will be recorded.

To take the survey, click here: [LINK]