

VESTED INTEREST AND PREPAREDNESS POLICY: INCREASING PREPAREDNESS
BEHAVIORS AMONG AMERICAN INDIVIDUALS AND FAMILIES

by

Nicholas E. Winters

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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Abstract

Natural disasters take place throughout the United States many times annually, from localized storms to hurricanes or earthquakes affecting many states. The federal government develops and implements preparedness policies, which are then translated into state, county, and municipality preparedness policies. Individual and family preparedness is a component of these preparedness policies; however, existing federal preparedness policies fail to prompt American individuals and families to prepare for natural disasters. The purpose of this study is to understand how the failures of the current preparedness policies contribute to the lack of individual and family preparedness and the political, social, and psychological factors that drive individuals and families to prepare—or not—for disasters. The theoretical framework for this study is Thorstein Veblen's (1919) vested interest theory, applied to the behaviors of individuals in relation to preparedness policy. The research questions focus on the factors that influence Americans' willingness and ability to prepare for disasters. A combination of survey analysis, policy evaluation, and case study analysis is used to investigate potential explanations for individuals and families failing to prepare. The results of this study indicate there are four primary factors influencing individuals' and families' level of disaster preparedness: preparedness beliefs, preparedness knowledge, preparedness behaviors, and preparedness actions. Using vested interest theory, this study proposes an explanatory model for individual and family disaster preparedness, the Vested Interest Preparedness Model (VIPM), which shows how preparedness beliefs and knowledge influence increased or decreased preparedness behaviors and actions; increasing beliefs and knowledge will increase behaviors and actions.

Keywords: individual, family, disaster, preparedness, vested interest theory

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List of Abbreviations

AAR: After-action review

CCP: Citizen Corps Program

CDC: Centers for Disease Control and Prevention

CERT: Community Emergency Response Team

COVID-19: SARS-CoV2 Coronavirus disease of 2019

CRS: Congressional Research Service

DHS: Department of Homeland Security

DOD: Department of Defense

EO: Executive Order

EPPM: Extended parallel process model

FEMA: Federal Emergency Management Agency

GAO: Government Accountability Office

HSPD-8: Homeland Security Presidential Directive 8

IRB: Institutional Review Board

NCDP: National Center for Disaster Preparedness

NDRF: National Disaster Recovery Framework

NGO: Nongovernmental organization

NIMS: National Incident Management System

NMF: National Mitigation Framework

NOAA: National Oceanic and Atmospheric Administration

NPF: National Prevention Framework

NPG: National Preparedness Goal

NPIF: National Planning Framework

NPR: National Preparedness Report

NPS: National Preparedness System

NRF: National Response Framework

NSS: National Security Strategy

NWS: National Weather Service

PDF: Portable Document Format

PPD-8: Presidential Policy Directive 8

PPE: Personal protective equipment

RCT: Rational choice theory

SAFE: Security and Accountability for Every Port Act

SEOC: State Emergency Operations Center

SERT: State emergency response team

SREF: Short Range Ensemble Forecast System

SRIA: Hurricane Sandy Recovery Improvement Act

TC: Tragedy of the commons

VIT: Vested interest theory

CHAPTER ONE: INTRODUCTION

Overview

This study examines individual and family disaster preparedness in America. Preparedness as a subject has been extensively studied in the post-9/11 era, especially since the creation of the U.S. Department of Homeland Security (DHS) in 2003 by the Bush Administration. Much of the existing literature is in U.S. government publications, with the balance of research emanating from government-oriented academic institutions, such as the Naval Postgraduate School and the U.S. Army Command and General Staff College. Most of the past research on preparedness surveyed for this study focuses on the federal level and on the preparedness of agencies, organizations, and institutions at the federal, state, tribal, and local levels. The importance of the individual and the family in disaster preparedness is often an afterthought, or is left out.

This study examines the subject of preparedness by answering the research question, “What are the factors that influence Americans’ willingness and ability to prepare for disasters?” Chapter 1 details the foundations of the research, including the background of the subject under examination, the personal and philosophical underpinnings for the research, and the significance of the research in relation to past research. In addition, this chapter details the problem statement from which the research questions were derived and the purpose of the research.

Background

The Department of Homeland Security and the Federal Emergency Management Agency (FEMA) have widely promoted preparedness to Americans for decades (National Preparedness Goal, 2011; 2015; National Preparedness Report, 2012; 2019; National Prevention Framework, 2013; 2016; National Planning Frameworks, 2013; National Disaster Recovery Framework,

2016; National Response Framework, 2019). However, in my work with emergency management departments in FEMA Region 10 (Washington, Oregon, Idaho, and Alaska), a consistent problem I have seen is that citizens either will not or cannot take the steps needed to prepare for disaster events. The National Incident Management System (NIMS), FEMA's framework for disaster responses, dictates responses are managed at the local level with support from states and the federal government (FEMA, 2019, pp. 6–7). In most cases, this means that a city or county is primarily responsible for disaster response within its jurisdiction. The local civil authorities use the resources available within their jurisdiction and resources borrowed from neighboring jurisdictions until resources are exhausted. Additional resources are then requested from the state level. States coordinate additional resources statewide and request resources from other states using the Emergency Management Assistance Compact mutual aid process. When in-state and state-to-state resources are exhausted, states request additional resources and funding from FEMA at the federal level. The Federal Emergency Management Agency coordinates federal resources and, if needed, requests support from other countries using existing mutual aid treaties (FEMA, 2019, p. 31).

For large-scale disasters, the resource coordination process is time-consuming; however, time is limited during a disaster response and the process needs to move rapidly. As resources flow into an affected region, local civil authorities must prioritize response objectives with available resources to do the most good for the most people in the shortest time possible. The greater the number of individuals and families within an affected region who have prepared for disaster events, the fewer resources civil authorities need to save lives during a disaster response. Resources can be focused on at-risk populations, including those directly affected (i.e., their home is destroyed, or they are injured), those indirectly affected (i.e., diabetics who need

refrigerated medication or elderly people who cannot care for themselves), and those who are likely to further stress the system (i.e., the homeless or criminals).

Situation to Self

I have a personal interest in the subject of disaster preparedness from my experience in the Army National Guard working closely with civilian emergency management agencies to prepare for disasters. I have seen many examples of individuals and communities failing to prepare for disasters, whether due to apathy, inability, or ignorance. I have taken extensive steps to prepare my family for potential disasters by stockpiling food, water, and medical supplies. There is enough for my family of six to survive for at least 14 days. I have grown increasingly curious as to the reasons people do not prepare and if there are steps that can be taken to convince them to change their preparedness behavior. I bring a constructivist or interpretivist paradigm to this research, meaning I believe truth can be discerned only through dialogue and reflection; truth is interpreted rather than measured. This paradigm comes with a set of philosophical assumptions. Ontologically, the nature of reality is a social construction of individuals. Epistemologically, knowledge is gained through experience and understanding the meaning of a social process. Axiologically, values are subjective to the researcher, with the bias and intuition of the researcher playing as important a role as the subjective ideas, biases, and interpretations of the research subjects (Ahmed, 2008). With this paradigm and its associated philosophical assumptions, I have chosen to use qualitative methodologies to approach this research.

Problem Statement

Research indicates that preparedness policy has not been effective in influencing American individuals and families to prepare for disaster events. A low level of individual and

family preparedness is a problem because it results in greater loss of life and increased costs to taxpayers during a disaster response. Within the broad subject of disaster preparedness, this research investigates the current federal preparedness policy, particularly its individual and family preparedness components. Preparedness policy is implemented at the federal level and applies to subordinate levels of government at the state, county, tribal, city, and community levels.

This dissertation's central research question is: "What are the factors that influence Americans' willingness and ability to prepare for disasters?" Existing research can be categorized as either government or academic research, both of which have identified flaws in the design and implementation of preparedness policy. As the proponent for preparedness policy, FEMA conducts routine citizen surveys to gather data about Americans' preparedness levels. These surveys are available to the public through FEMA's *Disaster Preparedness Surveys Database: Households, Businesses, and Schools* (2010), which is a key source for this research. Another key source from the government research is FEMA's *Preparedness in America: Research Insights to Increase Individual, Organizational, and Community Action* (2014), which presents survey results and recommendations for changes to preparedness policy to improve preparedness among Americans. According to academia, the research consensus is that change is needed, though the nature of that change is debated. One key source is *Trust in Emergency Management Authorities and Individual Emergency Preparedness for Tornadoes* by Choi and Wehde (2020), which examines the lack of preparation among Americans in tornado zones despite local and national directives to prepare. Another key source is *Citizen Preparedness for Disasters: Are Current Assumptions Valid?* by Uscher-Pines et al. (2016), which posits that the

current preparedness policy is based on flawed assumptions that need to be corrected for policy to be effective (p. 170).

A significant shortcoming in the existing research is a lack of investigation of the behavior of individuals and families, which contributes to failing to prepare. Existing research focuses heavily on identifying problems with policy design and implementation and on recommendations to modify policy. A coherent understanding of the reasons Americans do not prepare at the individual level is missing and this highlights that preparedness from the top down is not working. This dissertation uses vested interest theory (VIT), a theory of social psychology, to analyze the current preparedness policy to find an explanatory model for the lack of preparedness behaviors among Americans. Few existing research studies apply social psychology theories to the problem of individual and family preparedness, except in the case of VIT. This research contributes to the body of existing preparedness research by finding a model to help policymakers understand what drives individuals and families to prepare (or not) for disasters.

Purpose Statement

The purpose of this qualitative study is to understand how the failures of the current preparedness policies contribute to the lack of individual and family preparedness and the political, social, and psychological factors that drive individuals and families to prepare—or not—for disasters. At this stage in the research, individual and family disaster preparedness is defined as behaviors of individuals and families (adults and children) that are oriented around survival following a natural disaster event, including stockpiling supplies, making emergency plans, improving the survivability of structures, and communicating about preparedness.

Significance of the Study

Disaster events occur all over the world at all times of the year. Within America, small-scale disasters, such as storms and power-outages, are a regular occurrence. Large-scale disasters are less frequent, but every American has some recent large-scale disaster in his or her memory; 9/11, Hurricane Katrina, Hurricane Sandy, and the COVID-19 pandemic are only a few examples. Since 9/11, DHS and FEMA have pushed for preparedness at all levels of government and for all Americans. During that time, the number and severity of disasters has been steadily increasing, with generally fewer deaths each year but with greatly elevated property damage figures each year (Brusentsev & Vroman, 2017). Despite all of this people generally do not prepare for a future disaster. This research seeks to determine why this lack of individual and family preparedness is so pervasive.

This research has both theoretical and practical significance for disaster preparedness researchers and practitioners, which normally reside in the fields of homeland security and emergency management. On the theoretical side, this research investigates individual and family preparedness using VIT as a framework for analysis. Vested interest theory is promising as a method for understanding the current low rate of preparedness among Americans. This study outlines specifically how VIT can be applied to the problem of low levels of individual and family disaster preparedness. Using VIT, researchers can determine what attitude-objects best drive attitude-behaviors. The result is the marriage of social psychology and emergency management in a way that is both theoretically and empirically significant.

On the practical side, this research looks at the efforts taken to convince Americans to prepare, and some problems caused during disaster response when Americans fail to prepare. This study shows in depth the lack of effectiveness in current and past policies, and their

associated marketing campaigns, in causing preparedness behaviors to increase in America. This study provides a method that can be used by government and policymakers to tailor both policies and marketing campaigns at the specific attitude-objects that most significantly drive the needed attitude-behaviors.

There is a wide audience for this research, beginning with policymakers at the federal level within DHS and FEMA and extending down the chain to state emergency managers and county, city, or tribal emergency managers. Elected officials at all levels of government have an interest in making policy that drives the behavior of their constituents. Researchers in the fields of public policy, emergency management, and homeland security can use this research to open new avenues of inquiry in their field, while practitioners can use it to advance their profession. American citizens also can benefit from this research, as it can show the folly of failing to prepare for disasters and reveal how common a lack of preparedness is in America.

Research Questions

To gain insight into individual and family disaster preparedness policy and the preparedness behaviors of Americans, the following questions guide this study:

RQ: What are the factors that influence Americans' willingness and ability to prepare for disasters?

RQa: What effect have federal preparedness policies had on Americans' disaster preparedness level?

RQb: What phenomena can explain a lack of preparedness among Americans?

RQc: How does VIT explain or predict the attitude-behaviors of Americans regarding disaster preparedness?

To answer these questions, the current preparedness policy as it applies to individual and family preparedness must be understood. This study uses VIT to aid in comprehending the individual motivations of Americans as they relate to preparedness behaviors. According to FEMA, “As disasters continue to impact our Nation, the role of individuals and the importance of engaging all sectors in reducing the impact of disasters has become increasingly evident” (FEMA, 2014, p. 4). *Presidential Policy Directive 8* (PPD-8), signed by President Obama in 2011, states, “our national preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens” (FEMA, 2014, p. 4). These research questions center on determining some of the reasons that past and current preparedness efforts at the federal, state, tribal, and local levels have not significantly impacted Americans’ tendencies to prepare themselves and their families for disasters. An example from a 2010 earthquake preparedness survey in California states, “Californians in high-risk areas are not getting ready in proportion to the differential risks they face. Relatively few households have acted to mitigate losses and reduce injuries” (FEMA, 2010, p. 6). This example is indicative of a trend throughout America in the post-9/11 era, which is that

in spite of extensive messaging about the importance of citizen preparedness and countless household surveys purporting to track the preparedness activities of individuals and households, the role individual Americans are being asked to play is largely based on conventional wisdom. (Uscher-Pines, et al., 2012, p. 170)

Examining the behavioral mechanisms that drive a lack of preparedness behaviors among Americans can shed light on the source of the problem and lead to potential solutions that are not based solely on assumptions.

Definitions

1. Preparedness – Refers to measures taken to prepare for and reduce the effects of disasters (He & Zhuang, 2015, p. 246).
2. Natural disaster – An event that has a big impact on society. It is a hazardous event that disrupts the workings of society. It may or may not lead to deaths, but it typically has severe economic impacts (Alcantara-Ayala, 2002, p. 112).
3. Vested interest theory – Suggests that the hedonic relevance of an attitude-object moderates relations between attitudes, intentions, and responses to danger (De Dominics et al., 2014, p. 364).
4. Attitude-object – The concept around which an attitude is formed and can change over time. This attitude represents an evaluative integration of both cognition and affect in relation to the attitude-object (Crano & Prislin, 2006, p. 347).
5. Attitude-behavior (consistency) – The degree to which an individual understands an event or perception as personally relevant directly impacts the relationship between attitudes and behaviors (Sivacek & Crano, 1982, p. 210).
6. Stake – Refers to the perceived personal consequences of an attitude-object in terms of potential gain-loss judgments. When the perceived stake is high, messages are processed more systematically, generate more issue-relevant thoughts, and produce increased affective and cognitive engagement (Adame & Miller, 2015, p. 6).
7. Salience – Attitudes are perceived as directly accessible and personally relevant and both these subdimensions are necessary, since attitudes considered merely objectively important may be less cognitively accessible than those that are self-relevant; moreover, salient

attitudes are more likely to exhibit increased attitude-behavior consistency (Adame & Miller, 2015, p. 6).

8. **Certainty** – Addresses perceptions of the probability of consequences associated with action or inaction attendant upon attitude-relevant behavior, such that higher degrees of certainty contribute to higher probabilities of attitude–behavior consistency (Adame & Miller, 2015, p. 7).
9. **Immediacy** – Refers to the temporal interval between actions associated with an attitude-relevant behavior and their implied consequences. When the consequences of action, or inaction, are perceived to be immediate, pertinent attitudes will tend to be more predictive of relevant behaviors (Adame & Miller, 2015, p. 7).
10. **Self-efficacy** – One’s perception of one’s ability to effect change. Because attitude-objects afford a variety of responses and courses of action, the extent to which an individual perceives she or he can act in an efficacious way will moderate both the motivation and the decision to behave (Adame & Miller, 2015, p. 7).

Summary

Existing preparedness policy addresses individual and family preparedness using a top-down, federal-centric approach that has not proven effective in driving preparedness behaviors among Americans. Americans fail to prepare for a variety of reasons, but this failure to prepare equates to lives lost during disaster events. By applying VIT to the problem of individual and family disaster preparedness, I attempt to fill the gaps in the existing body of preparedness research, and show how preparedness policy can be reformulated to drive preparedness behaviors among Americans.

CHAPTER TWO: LITERATURE REVIEW

Overview

Chapter 2, the literature review, evaluates current federal policy, government research, and academic research on individual and family disaster preparedness in America. This chapter further identifies the links between social psychology and disaster preparedness within existing literature. The sources of literature on this subject vary widely, with a significant portion originating with federal agencies, such as DHS and FEMA. In preparedness research, a large percentage of the available literature comes from government-funded research at institutions such as the Naval Postgraduate School's Center for Homeland Defense and Security. The literature listed here is exhaustive within the timeframe selected for this study, which covers relevant literature since the September 11, 2001, terrorist attacks on New York and Washington D.C. This literature review begins with an overview of the theoretical framework used for this study. This is followed by a discussion of current preparedness policy, broken into three categories: formulation of preparedness policy, development of preparedness policy, and disaster response policy specifically. Next, it evaluates the body of preparedness research from government agencies and from academic institutions. Social psychology literature is then detailed for the three theories used in this study, which are VIT, RCT, and TC. Finally, the foundational literature for the methods used in this study is reviewed in detail.

Theoretical Framework

The theory guiding this study is VIT, formulated by Thorstein Veblen in 1919, as it applies to the behaviors of individuals in relation to preparedness policy and preparedness needs during disaster events. According to Miller et al. (2013), VIT addresses three fundamental

questions that relate to the relationship between preparedness attitudes and preparedness behaviors (p. 5). These questions are summarized as follows:

1. How are attitudes and attitude-relevant behaviors related?
2. What attitudes are causally linked to behaviors?
3. What mechanisms influence individual attitudes?

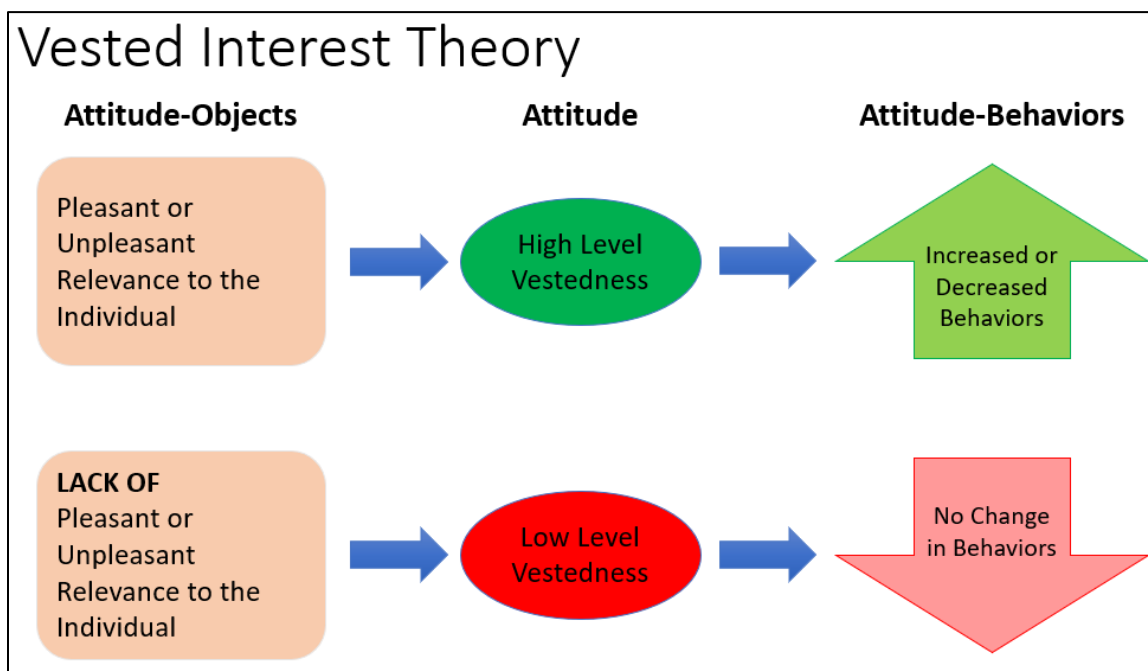
Miller et al. (2013) explain that the nature of attitude-behavior relationships is more complicated than it seems, arguing that “the lack of traction between many attitudes – even strongly-held [*sic*] attitudes, considered to be objectively important – occurs on multiple levels, including the cognitive, the emotional, the contextual, and the cultural” (Miller et al., 2013, p. 5). The authors suggest that VIT as a framework for disaster preparedness (Sivacek & Crano, 1982; Crano, 1983; Crano & Prislin, 1995) can reliably predict which attitudes have the most influence on which attitude-behaviors (Miller et al., 2013, p. 6).

Vested interest theory concerns the hedonic (pleasant or unpleasant sensation) relevance of an attitude-object in its ability to have meaningful, personal consequences for an individual attitude holder. If an individual’s attitude and the attitude-object in question are hedonically relevant, then the attitude in question is highly vested for the individual (Miller et al., 2013, p. 6). Vested attitudes, or vested interests, are powerful predictors of attitude-behaviors. Attitudes that are not vested for the individual do not normally predict attitude-behaviors, as they have little or no relation to the attitude-object (Crano & Prislin, 1995, pp. 2-3). There are five key dimensions that affect vested interest and attitude: stake, salience, certainty, immediacy, and self-efficacy. These five dimensions serve as indicators of vested interest and a particular attitude for an individual. Not all five need to be present for the attitude to be vested, but most of these dimensions are always present when an attitude is vested and absent when an attitude is not

vested (Crano & Prislin, 1995, p. 5). Figure 1 below is an illustration of VIT based on the research conducted for this study.

Figure 1

Vested Interest Theory Diagram



This model is a simplified description of VIT to aid in understanding. The first column is attitude-objects, the second column is attitudes, and the third column is attitude-behaviors. The top row represents attitudes that are highly vested, and the bottom row represents attitudes that are not highly vested. When an individual's attitude toward an attitude-object is either positive or negative based on hedonic relevance, the attitude becomes a vested interest. This vested interest results in changes in behavior based on the attitude-object, either increasing or decreasing behavior in proportion to the level of vestedness in the attitude-object. When an individual's attitude toward an attitude-object is not positive or negative, there is no hedonic relevance, thus the attitude is not a vested interest. The result is either no change in behavior or change in behavior that is not related to the attitude-object.

Two other theories of social psychology were considered along with VIT. First, rational choice theory (RCT) holds that the aggregate of all social behaviors is the result of subjective individual decisions and behaviors within the social system. These decisions and behaviors are rational from the perspective of the individual, based entirely on the expected return the decision or behavior brings back to the individual. With RCT, the state has no influence over individuals, which negates the perspective that public policy can drive behavior changes (Hechter & Kanazawa, 1997, p. 191). Second, tragedy of the commons (TC), originally an economic theory, asserts that individuals consciously take irrational risks in the hope that fate will be on their side and any expected negative outcome will not come to pass. This is the idea that “lighting does not strike the same place twice.” The tragedy of the commons, or property that is available for use by every common person, suffers from the fact that nobody has a self-interest in or personal responsibility for its preservation. With individual and family preparedness, TC is not at issue; the problem is not community preparedness, but private preparedness, which is not part of TC (Hardin, n.d.; 1968).

Related Literature

This literature review concentrates primarily on preparedness policy after the September 11th, 2001, terrorist attacks on New York and Washington D.C., though some publications addressing pre-9/11 policy are included for a historical context for current policy. This focus was selected for two reasons. First, scholarship about preparedness is minimal prior before 9/11 because it was not at the forefront of politics or academic interest. Second, publications prior to 9/11 hold less relevance to the current global environment. Limiting this review to the policy environment of the past 20 years does little to reduce the scope of this evaluation; rather, this

limitation increases the relevance of this evaluation in the hope of modifying existing policy to improve individual and family preparedness.

Preparedness Policy

Formulating Policy. There are many ways to measure preparedness levels among American individuals and families. The NPR, produced annually, measures preparedness using the five FEMA mission areas; prevention, protection, mitigation, response, and recovery (FEMA, 2011). Preparedness is a component of all these mission areas, but most frequently is measured within the prevention mission area. The 2019 NPR states that there was an increase in the preparedness of state, local, tribal, and territorial first responders through an increase in training opportunities. While this does relate to preparedness, it does not relate to individual and family preparedness except perhaps for the families of the first responders involved in the referenced training. The NPR measures preparedness primarily through data calls from federal, state, tribal, and local community agencies as well as open source literature review of preparedness issues across the whole of the preparedness community (NPR, 2019, p. 6). This qualitative measure is bolstered by quantitative data from FEMA's preparedness grant programs, essentially equating funding provided for preparedness activities with increased levels of preparedness. Because of the challenges with measuring individual preparedness using FEMA's methods of measurement, this research uses survey findings to measure preparedness levels reported by survey participants rather than any nationally accepted measurement.

To continue with formulation of policy, there are three sources that provide a broad overview of the preparedness policy environment. The National Academy of Sciences website gives summaries of PPD-8, the Stafford Act, the Disaster Mitigation Act of 2000, the Homeland Security Act of 2002, the National Disaster Recovery Framework (NDRF), and several others

(National Academy of Sciences, 2015). In a similar vein, the *Dictionary of Emergency Management and Related Terms* (2007) is an exhaustive list of emergency management related terms, legislation, and acronyms with detailed definitions. It is an excellent reference to maintain common terminology within the emergency management field of study. The bibliography lists dozens of potential additional research sources for the subject matter of this dissertation (Blanchard, 2007). A third report, from the National Preparedness Task Force, summarized the history of homeland security, which can be traced back to civil defense legislation during World War I. *Civil Defense and Homeland Security: A Short History of National Preparedness Efforts* (2006) provides a wealth of background information and context about disaster preparedness leading to the current policy environment. While this dissertation focuses on post-9/11 sources, understanding what came before is important to form a foundation for study. It can also show what has been attempted in the past with either positive or negative results (National Preparedness Task Force, 2006).

Modern emergency preparedness and disaster mitigation policy began with the 9/11 terror attacks, which dramatically changed the American concept of domestic security and emergency response. No longer would disaster preparedness be limited in scope to hurricanes and tornados; henceforth, disaster preparedness would encompass a broad range of natural, man-made, and violent disaster scenarios. Current policy began with *Homeland Security Presidential Directive 8* (HSPD-8), signed in 2003 by then President George W. Bush. This was the first in a long line of federal policies on homeland security topics following in the wake of 9/11 (Bush, 2003). President Barack Obama followed HSPD-8 in 2011 with PPD-8, which was for the most part a reissuance of HSPD-8, but with a much stronger emphasis on preparedness efforts than specifically on prevention of terrorist attacks (Obama, 2011). Full details on PPD-8 are given on

both the DHS and FEMA websites. The Department of Homeland Security divided PPD-8 into its major sections, providing summaries on the National Preparedness Goal (NPG), the National Preparedness System (NPS), building and sustaining preparedness, National Preparedness Reports (NPRs), and roles and responsibilities of different levels of government. Every component of PPD-8 included preparedness as the first step (DHS, 2018). Similarly, the FEMA website provides summaries of the sections of PPD-8 but goes further to provide detailed explanations of its implementation along with a host of additional resources for emergency management practitioners (FEMA, 2021).

The main component of PPD-8 relevant to this research is the NPS, which is detailed on the FEMA website, along with additional resources for emergency management practitioners. Components of the NPS include the NIMS and the Incident Command System, which provide a framework for all levels of government during a disaster response. The NPS is more focused on national and state government preparedness for emergencies than on individual preparedness, which highlights a part of the problem associated with preparedness for disasters (FEMA, 2019). In addition to the NPS, PPD-8 directed the federal government to establish and monitor an NPG, the first of which came in 2011, mere months after PPD-8 was signed by President Obama. The NPG outlined national goals for the FEMA mission areas of prevention, protection, mitigation, response, and recovery. Individual preparedness fell under the prevention mission area (DHS, 2011). The NPG was updated in 2015 to account for preceding events, such as the Boston Marathon Bombing in 2013, and incorporating multiple updates based on changes to policy and legislation between 2011 and 2015 (DHS, 2015). The NPG website is maintained by FEMA and holds updates and modifications to the NPG for immediate use by federal or state agencies (FEMA, 2015).

The feedback and assessment mechanism for the NPG is the NPR, which summarizes actions taken over the past year in support of achieving the components of the NPG. For the purposes of this research, the NPRs from 2012 (DHS, 2012) and 2016 (FEMA, 2016) are relevant as they reflect accomplishments one year following the 2011 and 2015 NPGs, respectively; in addition, the NPR from 2019 is included as the most recent report. The 2019 report listed 15 findings that highlight both successes and challenges in each of the five FEMA mission areas, including individual preparedness under the prevention mission area (FEMA, 2019). The NPRs provided context on the FEMA perspective for preparedness, including success and failure from the previous years. Another effort by the Obama Administration to promote individual and community preparedness was the annual National Preparedness Month during the month of September, coinciding with 9/11. These began in 2009 with Presidential Proclamation 8412. The purpose of the National Preparedness Month is to place a national emphasis on individual preparedness (Obama, 2009). To show changes in emphasis over time, the National Preparedness Month proclamations for 2010 (Obama, 2010), 2011 (Obama, 2011), and 2012 (Obama, 2012) are included here.

Developing Policy. These are not the only efforts made by DHS or other federal agencies to promote the idea of individual preparedness. A 2007 DHS press release, *Creating a Culture of Preparedness Among Schools*, listed various ways that schools could assist in preparing for disasters to ensure their children stay safe. Individual preparedness included preparedness for children at home and at school, as well as preparedness for adults at home and at work. This information must be incorporated into any comprehensive preparedness plan (Office of the Press Secretary, 2007). Another DHS press release from 2009 recounted a speech from then Secretary of Homeland Security, Janet Napolitano, emphasizing the importance of individual and

community preparedness in the overall NPS. This speech was given at the conclusion of the National Preparedness Month in 2009 (Office of the Press Secretary, 2009). The Department of Homeland Security is not the only entity that has pushed for improved individual preparedness. North Carolina Congressman Robert Pittenger published a detailed guide for his constituents, showing what individuals and families can do to prepare themselves and their communities for both terrorist attacks and natural disasters. This document was a good example of translating national preparedness efforts to a more local level (Pittenger, n.d.). Another aspect of efforts to improve preparedness are audits from the Government Accountability Office (GAO), which investigates government policies and programs, especially related to whether the programs have met the objectives or milestones for which they were designed. A particularly relevant GAO audit is from 2010, *FEMA Faces Challenges Integrating Community Preparedness Programs into its Strategic Approach*. This report detailed difficulties FEMA faces with integrating individual preparedness into the NPS (Jenkins, 2010).

Federal preparedness policy is only one aspect of holistic individual and family preparedness. In addition to preparedness at the local, state, and federal level, the U.S. National Security Strategy (NSS) outlines the need to prevent future disasters within or attacks against the United States. The most recent NSS was announced in 2017 by President Donald J. Trump, and it addressed federal measures for both prevention and preparedness, along with a host of other security-related policies (Trump, 2017). The National Prevention Framework (NPF), another result of Obama's PPD-8, addresses actions that need to be taken to prevent attacks against the homeland. The NPF addresses individual and family actions in support of national prevention strategies. At the individual level, preparedness and prevention are part of the same comprehensive subject (DHS, 2013a). The original NPF, published in 2013, was updated in

2016. This update primarily represented changes associated with FEMA's consolidation of the various planning frameworks, and other updates based on changes in policy and legislation between 2013 and 2016 (DHS, 2016). The planning frameworks included the prevention, mitigation, response, and disaster recovery frameworks, which were described in the *Overview of the National Planning Frameworks* (DHS, 2013a) document. This document was designed to bring together multiple national frameworks that have grown out of the post-9/11 homeland security environment. These frameworks were developed under the auspices of DHS and FEMA, but formed and solidified independently from one another, necessitating consolidation of effort to improve integration with FEMA's "whole of community" approach (DHS, 2013a).

Disaster Response. Now that federal policy regarding preparedness and prevention has been covered in depth, the next major policy area is the *Robert T. Stafford Disaster Relief and Emergency Recovery Act* (Stafford Act), which was first enacted in 1988. This legislation outlined the "how" behind emergency response to any type of disaster within the United States, including disaster declarations, state versus federal funding, and federal assistance to states. The Stafford Act has been amended multiple times since its inception. For the purposes of this research, the most recent amendments from 2013, 2016, and 2019 are listed. The 2013 update incorporated changes based primarily on lessons learned from the Hurricane Sandy response (FEMA, 2013). The 2016 update incorporated wildfires into the coverage of Stafford Act (FEMA, 2016). The update in 2019 amended the Stafford Act to provide allowances for unmet needs for underserved populations (FEMA, 2019).

The Congressional Research Service (CRS) has published several reports based upon requests from congress to explain different components and functions of the Stafford Act. The documents from the CRS tend to be exceptionally reliable, well-researched papers that give

excellent summaries of key government issues, especially those related to laws and policies passed or amended by congress. *Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding*, written in 2008, summarizes the Stafford Act, as well as pending actions to amend the Stafford Act by the 110th Congress. Also covered are previous Stafford Act disaster declarations and funding issues associated with disaster declarations (Bea, 2008). The same document was updated and reissued in 2010 to address the Stafford Act amendments actioned by the 111th Congress. The utility of this document was that it shows small changes made by congress to the Stafford Act between 2008 and 2010 (Bea, 2010). Another CRS report, *FEMA's Disaster Declaration Process: A Primer* (2014), covered the Stafford Act's financial assistance programs available during and after disasters. It had a high degree of detail related to individual financial assistance following a disaster, including disaster insurance programs and averages for individual assistance in past disaster responses (McCarthy, 2014). More recently, the 2018 CRS report, *Congressional Primer on Responding to Major Disasters and Emergencies* explained the Stafford Act's disaster response process followed by a deep dive into financial assistance both during and after a disaster, which was provided by both the federal government and nongovernmental organizations (NGOs; Lindsay & Webster, 2018). This concludes the relevant federal policy for individual preparedness, with three primary topics addressed: preparedness under the NPS, prevention under the NPF, and response under the Stafford Act.

Preparedness Research

Government Research. FEMA and other U.S. government agencies have conducted extensive research, both qualitative and quantitative, into the issue of individual and family disaster preparedness. An overview of this research has been consolidated for reference on the

Centers for Disease Control and Prevention (CDC) website. This resource is categorized into the various factors that influence individuals and families either to prepare for disasters or not, with findings based on information collected from several sources over multiple years (Thomas et al., 2015). The research database provided on the CDC website is largely available to the public, and a similar database is maintained by FEMA. Known as the *Disaster Preparedness Surveys Database: Households, Businesses, and Schools* (2010), the resource lists dozens of disaster preparedness surveys conducted by various federal agencies and NGOs from 2001 to 2010. These surveys present a wealth of quantitative research data related to individual preparedness, which will aid in formulating conclusions and recommendations in this research study (FEMA, 2010).

An example of the type of research conducted by FEMA is *Personal Preparedness in America: Findings from the 2009 Citizen Corps National Survey* (2009), which presented the results of the 2009 Citizen Corps Program (CCP) personal preparedness national survey. This survey provided data on the extent of individual preparedness, existing barriers to preparedness, perceptions of risk and utility related to preparedness, potential stages of change in preparedness, and differences in preparedness based on demographics. The report from FEMA also provided recommendations for improvement to individual preparedness policies at the national and state level (FEMA, 2009). In another example from 2014, FEMA published *Preparedness in America: Research Insights to Increase Individual, Organizational, and Community Action*, which gave insights and recommendations for improving individual preparedness based on previous survey results and FEMA-funded research studies. In this report, FEMA acknowledged that past national preparedness efforts did not cultivate a culture of preparedness among Americans, and

that changes were needed in both the national approach to preparedness and in individuals' views of the need for preparedness (FEMA, 2014).

A follow-up survey to the 2009 CCP survey was conducted by FEMA, which resulted in the publication of the *2015 National Household Survey* (2015). This survey's findings indicated that messaging on preparedness should shift focus from general preparedness to preparedness for specific hazards. Further, the survey concluded that increased awareness of the impacts of specific hazards increases the likelihood that individuals take preparedness seriously (FEMA, 2015). With this targeted approach in mind, FEMA began publishing documents, such as *Building Cultures of Preparedness: Report for the Emergency Management Higher Education Community* (2019). This report presented recommendations and strategies for individual and community preparedness specifically targeted at the higher education community. As previously addressed, preparedness in schools is a significant part of overall individual and family preparedness, which extends beyond K-12 education (FEMA, 2019). These FEMA publications are just a few of many examples of FEMA's efforts to improve the framing and perception of individual preparedness to foster a preparedness environment.

Academic Research. The remaining literature in this review falls into the broad category of academia, including dissertations and research papers. To begin, an article by Hong, Kim, & Xiong, *Media Exposure and Individuals' Emergency Preparedness Behaviors for Coping with Natural and Human-Made Disasters* (2019), asserts that individual and family emergency preparedness is critical to improve resilience for disaster events. Using media exposure as a measurement, the authors test the effect of media exposure on risk perception and preparedness behaviors, specifically in Hangzhou, China. Their results show that higher media exposure increased both the perception of risk and preparedness behaviors overall, regardless of an

individual's actual disaster experience (Hong et al., 2019). This research indicates support for FEMA's methods of informing the public through the media. However, the demographics of the population play a role in their receipt of preparedness information. In the article, *Bracing for Hurricanes: A Qualitative Analysis of the Extent and Level of Preparedness Among Older Adults*, Wang (2018) asserts that older adults are at the greatest risk through all stages of a disaster event. Wang's research finds that older adults do prepare for disasters, but almost overwhelmingly they only prepare by storing food and water. The author points out that preparedness has a different definition for everyone depending on their personal knowledge and experience regarding disasters, with personal experience in a disaster as the most significant factor in driving preparedness behaviors (Wang, 2018).

Choi and Wehde suggest in a 2020 article that the lack of preparation among Americans in tornado zones, despite local and national directives to prepare, is due to a lack of trust in both local and federal authorities. In *Trust in Emergency Management Authorities and Individual Emergency Preparedness for Tornadoes*, the authors argue that the level of trust an individual has in local and federal emergency management authorities affects their level of preparedness (Choi & Wehde, 2020). Further, the authors find that increased levels of preparedness for tornadoes can be explained by higher levels of trust in local government rather than federal government agencies such as FEMA (Choi & Wehde, 2020). This supports the idea that a federal-centric approach to preparedness policy does not drive preparedness behaviors among American individuals and families. However, the federal-centric approach is not the only issue. In *Emergency Responder Personal Preparedness*, Kelenske (2011) investigated the phenomenon of a lack of individual and family preparedness among emergency response workers. Although these emergency response workers are responsible for assisting in disasters and in educating

citizens on the importance of preparedness, generally they are not themselves prepared (Kelenske, 2011). In some cases, the military is used as a stopgap for unprepared communities, although planners do not fully understand the capabilities of the military in support of civil authorities. Middleton provided an overview of this topic in his 2011 research paper, *Calling the Cavalry: Disaster Relief and the American Military*. This paper detailed the phases and types of military response to support civil authorities during disasters. Americans generally have an unrealistic view of the ability, speed, and capacity of the military during disaster response, expecting the military can provide immediate, total, and unending support to citizens. Part of building effective preparedness is to disabuse citizens of this type of notion (Middleton, 2011).

Perhaps the foundational flaw in individual preparedness is that current and past plans have been largely based on poor assumptions. The authors of *Citizen Preparedness for Disasters: Are Current Assumptions Valid?* (2012) pointed out that current government programs addressing individual preparedness are based on a series of flawed assumptions that need to be corrected for the preparedness policy to be effective. The authors concluded that the role that individuals and families are being asked to play is largely based on conventional wisdom rather than on concrete fact or empirical evidence (Uscher-Pines et al., 2012).

Preparedness is a complicated subject, with multiple interwoven components that can be difficult to understand on their own, let alone as a complete system. Many of the issues with emergency preparedness stem from the rapid implementation of new policies and legislation in the wake of 9/11. Kahan's 2014 article, *Preparedness Revisited: Whither PPD-8?*, addressed the intent behind the Obama Administration's PPD-8 and some of the challenges involved in the rapid implementation of that rather complex document. The author asserted that PPD-8 would not be

effective in its implementation if government impediments are not removed or streamlined, ultimately falling short of its overly ambitious goals (Kahan, 2014).

There are some successes in existing preparedness policy. Congress has continued to recognize the importance of preparedness. In 2016, the House Subcommittee on Emergency Preparedness, Response, and Communications issued a report, *A Prepared Community is a Resilient Community*. This report provided witness statements and insights from government officials at the local, state, and federal level related to successes and failures in the realm of community preparedness and resilience (House of Representatives, 2016). The House Subcommittee on Emergency Preparedness presented potential solutions to some of the preparedness issues discussed thus far. The Subcommittee's 2019 report, *Protecting Every Citizen: Assessing Emergency Preparedness for Underserved Populations*, provided witness statements and insights from government officials at the local, state, and federal level related to underserved population definitions, efforts to provide disaster assistance to these populations, and room for improvement in future disasters (House of Representatives, 2019). One way of addressing these underserved populations is through a social justice lens. In the 2020 article *Individual Emergency-Preparedness Efforts: A Social Justice Perspective*, authors McNeill, Richie, & Alfred address this very issue. According to this article, population growth and demographic shifts have resulted in people with little financial resources suffering from access and service gaps related to disaster preparedness. The authors argue that identifying these socioeconomic challenges is the first step to overcoming them. The authors conclude with a theory, that financial assistance to these low-income populations will promote engaged and resilient individuals and families which are better able to prepare for and survive disaster events (McNeill et al., 2019).

Shortfalls in disaster preparedness have been noted since the 9/11 terror attacks in New York and Washington D.C. Eisenman et al. (2006) described the difficulties in individual-level preparedness. While specific to terrorism preparedness, this study found that only 28% of Los Angeles County residents had gathered emergency supplies and only 17% had developed an emergency plan (Eisenman et al., 2006, p. 1). Interestingly, this study examined demographic anomalies such as ethnicity, education level, and whether the household had children under the age of 18; the study concludes that demographic categories have a noticeable impact on whether an individual or family prepares for a disaster (Eisenman et al., 2006). In a similar study, Miceli et al. write in a 2008 article, *Disaster Preparedness and Perception of Flood Risk: A Study in an Alpine Valley in Italy*, that there is a positive association between perception of flood risk and level of individual and family preparedness for a flood event. The authors interviewed over 400 residents of a flood-prone area in Italy to determine preparedness. Overall, the authors conclude that worry over flooding, or perceived flood risk, is a stronger predictor of preparedness behaviors than actual flood risk (Miceli et al., 2008). Murphy et al. take this conclusion further in their 2009 article, *Predictors of Emergency Preparedness and Compliance*. This article looks at preparedness actions such as gathering supplies and making a plan and correlated these with preparedness efficacy (a belief that preparedness helps) and risk perception. Based on a national representative survey sample, the authors conclude that perceived efficacy of recommended preparedness actions increases individual and family compliance with government preparedness recommendations and overall preparedness (Murphy et al., 2009, p. S1).

Further research related to preparedness takes a more theoretical approach to the subject. In a 2010 study, *Theory-Based Approaches to Understanding Public Emergency Preparedness: Implications for Effective Health and Risk Communication*, Paek et al. use health behavior and

media effects theories to examine emergency preparedness. Using these theories, the authors analyze a Georgia statewide survey. They conclude that preparedness efficacy, subjective norms, and exposure to emergency-related news broadcasts are positively associated with preparedness behaviors such as gathering emergency supplies and making an emergency plan (Paek et al., 2010, p. 428). This article suggests that preparedness is less related to an individual's demographics than it is related to an individual's cognitive associations with disasters and preparedness (Paek et al., 2010). Another article, written by McNeill et al. in 2013, examines the psychological and physiological factors involved with preparedness. The article, *Expecting the Unexpected: Predicting Physiological and Psychological Wildfire Preparedness from Perceived Risk, Responsibility, and Obstacles*, looks specifically at wildfire preparedness in Perth, Australia. The authors differentiated between preparedness for evacuation and preparedness for staying home during a wildfire event, finding that regardless of the type of preparedness, individuals with a high perceived risk and a high perceived responsibility had a higher level of preparedness of both types. An interesting finding in this study is that individuals who expected to receive an official wildfire warning and those who expected to lose electricity during a wildfire were noticeably less likely to be prepared for a wildfire event (McNeill et al., 2013).

Though these studies show that demographics may be less linked to preparedness than traditionally thought, others have drawn a different conclusion. In the 2011 article *Household Preparedness for the Aftermath of Hurricanes in Florida*, Baker examines preparedness in the aftermath of hurricanes in Florida in 2004, 2005, and 2006. Using telephone interviews, the study found that most Florida households were well prepared for hurricanes, and that demographics such as home ownership, race, age, and type of housing were strongly related to preparedness levels. Further, the study concluded that difficulties in meeting needs in the

aftermath of hurricanes were due to a small percentage of households consuming a large percentage of relief supplies and from households consuming relief supplies despite reporting being prepared for a hurricane (Baker, 2011). These findings are supported by Kohn et al. in their 2012 study, *Personal Disaster Preparedness: An Integrative Review of the Literature*. This study examined 36 past studies related to disaster preparedness to determine the state of research and evidence for disaster preparedness. While concluding that the factors influencing disaster preparedness are complex and multifaceted, the authors do assert that factors such as demographics, trust in government, disaster experience, and having children in the home are strong influencers of an individual's or family's level of preparedness (Kohn et al., 2012).

Other research confirms that demographic factors play a significant role in preparedness levels. Norris et al. (1999) produced a study entitled *Revisiting the Experience-Behavior Hypothesis: The Effects of Hurricane Hugo on Hazard Preparedness and Other Self-Protective Acts*. For this study, the authors interviewed residents of four hurricane-prone southern cities to determine the effects of Hurricane Hugo on individual preparedness two years after the hurricane. Findings indicate that more direct exposure to the hurricane was positively linked to a higher level of preparedness in subsequent years. The effects of exposure to a disaster event were also measured in other areas such as vehicle safety and health maintenance in addition to disaster preparedness (Norris et al., 1999). Taking this a step further, in *Factors Predicting Individual Emergency Preparedness: A Multi-State Analysis of 2006 BRFSS Data*, authors Ablah et al. (2009) attempt to identify the factors most likely to predict higher levels of individual and family disaster preparedness. Using data from the Behavioral Risk Factor Surveillance System (BRFSS), this study determined that 78% of respondents reported being prepared for a disaster, but only 45% of the same respondents were actually prepared when objective preparedness

measures were used (Ablah et al., 2009, p. 317). According to the authors, among the factors most linked to a high level of objective preparedness were “feeling ‘well prepared,’ having a disability or health condition requiring special equipment, being 55 to 64 years old, and having an annual income above \$50,000” (Ablah et al., 2009, p. 317). This study not only identified some demographic measures that predict high levels of disaster preparedness, but it also identified a widespread lack of disaster preparedness overall and a large gap between perceived preparedness and objective preparedness (Ablah et al., 2009).

Some studies focus on a single demographic to investigate its effects on preparedness levels across that demographic spectrum. Al-Rousan et al., in their 2014 study entitled *Preparedness for Natural Disasters Among Older US Adults: A Nationwide Survey*, examined disaster preparedness specifically among the aging U.S. population. Of over 1,300 adults aged 50 and over, only 34% reported having sought or received information related to disaster preparedness (p. 506). Also, 15% of respondents reported using medical devices that require electrical power, which could be at risk during a power outage (p. 506). This study concluded that increased age, physical disability, lower income, and lower education level are independently and significantly associated with worse individual and family disaster preparedness (Al-Rousan et al., 2014). In another 2014 study, Kang examined disaster preparedness levels among the aging population in South Korea. In the article *Disaster Preparedness Among Vulnerable Older Adults with Chronic Diseases: Results from a Cross-Sectional Study in Incheon, Korea*, the author surveyed 165 older adults, finding that 80% of older adults have a chronic condition that requires medication to manage (p. 46). While the general preparedness level of the participants in this study was low, those with multiple chronic conditions tended to be more prepared for disasters, especially by having a supply of needed

medications (Kang, 2014). Similar results were reported in a 2012 article, *At-Home Disaster Preparedness of Elderly People in Hong Kong* by Loke et al., which examines disaster preparedness among older adults in Hong Kong. Interestingly, many of the elderly survey respondents reported having a survival pack (86.9%), knowing how to contact family during an emergency (54%), and knowing how to turn off water and gas lines (79.2%; p. 524). However, only 22.4% of respondents reported being fully prepared for a major disaster event (p. 524). According to this study, factors that contribute to a higher preparedness level among older adults are being born in Hong Kong, living with family members, having neighbors to help them, and perceiving themselves as capable of helping themselves during a disaster (Loke et al., 2012).

The final article in this section is a 2018 study by Wang, entitled *Bracing for Hurricanes: A Qualitative Analysis of the Extent and Level of Preparedness Among Older Adults*. As with the previous set of articles, this study looks at preparedness levels of older adults. However, this study focuses on pre-hurricane disaster preparedness rather than general disaster preparedness. The results from 30 interviews of Florida residents aged 60 to 90 years old show that preparedness among older adults is overwhelmingly limited to storing food and water for an emergency (p. 57). Most participants did not have an emergency plan, had not made improvements to their homes, and did not have financial resources for preparedness activities (p. 57). The author points out that the definition of preparedness is different for each individual, which may be part of the reason many people are not prepared for disasters based on objective measures of preparedness. There are numerous variables involved in individual and family disaster preparedness, making it challenging to predict preparedness levels based on a single variable like age (Wang, 2018). This concludes the academic and government research associated with preparedness. It is evident that, over time, there have been efforts made to better

understand the problems with individual preparedness and to present recommendations to correct those issues.

Social Psychology

Vested Interest Theory. The research discussed in the previous section is helpful in determining the source or sources of the preparedness problem, but it does not necessarily provide a model for holistic improvement. To drive changes in preparedness behavior, it is appropriate to step into a different field of study for insight, that of social psychology. Vested interest theory was first proposed by Thorstein Veblen in his 1919 work, *The Vested Interests and the Common Man*. This is the primary source of all the subsequent literature on VIT. Essentially, VIT posits that if people have a personal stake, or vested interest, in the result of a policy or law, their personal interests can shape their behavior, causing them to either support or rail against the policy or law depending on the nature of their self-interest (Veblen, 1919). After this primary source, Joseph Dorfman compiled an extensive listing of Veblen's work leading up to and following his VIT publication in 1919. This bibliography pointed to a tremendous amount of additional primary source information on this theory to support additional research (Dorfman, 1934).

Secondary source research on VIT developed in the 1980s. Crano established himself as an expert on Veblen's work, including VIT. Crano and Sivacek wrote in their 1982 article, *Vested Interest as a Moderator of Attitude-Behavior Consistency*, that the degree to which an individual understands an event or perception as personally relevant directly impacts the relationship between attitudes and behaviors. In two studies, they showed that attitude-behavior relationships are directly tied to the degree to which an individual is personally vested in the subject of the study (Sivacek & Crano, 1982). In a subsequent 1995 article by Crano and Prislin,

Components of Vested Interest and Attitude-Behavior Consistency, the authors asserted that vested interests, also known as attitude-objects, are a major element in fostering attitude-behavior consistency. The authors hypothesized that various factors may influence the effects of vested interests on attitude-behavior consistency. Results of the research indicated that stake is overwhelmingly important in attitude-behavior consistency (Crano & Prislin, 1995). Crano wrote two supporting articles in 1997 in the *Journal of personality and social psychology*. In *Vested Interest and Symbolic Politics – Observations and Recommendations*, Crano responded to criticisms of a past publication related to the logic of analytic design, the strength of effects, and the possibility of an apparent discontinuity between survey and laboratory findings related to self-interest. He responded to these criticisms in turn, concluding that his findings in the previous publication were still valid (Crano, 1997). In *Vested Interest, Symbolic Politics, and Attitude-Behavior Consistency*, Crano argued that VIT holds direct relevance to attitude-behavior consistency. He presented a counterargument from symbolic politics theory, which holds that self-interest is irrelevant to attitude-behavior consistency. To counter this, Crano argued that attitudes acquired by individuals early in life are generalized to other issues and provide motivation for actions, even actions contrary to self-interest. The conclusion suggested that VIT and symbolic politics can coexist (Crano, 1997).

Attitude is a major component of VIT. A comprehensive study of the components of attitude, *Attitude Strength: Antecedents and Consequences*, edited by Petty and Krosnick, looked in depth at the psychological study of attitudes as they relate to behaviors. While none of the chapters is specifically oriented on VIT, this book provided background information on attitudes, attitude-objects, and attitude-behaviors, all of which are components of VIT. To determine vested interests, individual attitudes and their associated components must be understood in

detail (Petty & Krosnick, 1995). A 2001 article by Lehman and Crano, *The Pervasive Effects of Vested Interest on Attitude-Criterion Consistency in Political Judgment*, brought the attitude component of VIT to light in relation to politics. In this article, the authors examined the utility of VIT in predicting attitude-behavior related to the type and degree of participation in national elections. Vested interest theory suggests that people act consistently on issues of high personal interest. Examination of this theory using three different analysis areas suggested that VIT is a strong predictor of attitude consistency regarding behavior in elections (Lehman & Crano, 2001).

In the more recent VIT literature, the theory has been applied to disaster preparedness in a way that ties into the theme of this literature review. In *Vested Interest Theory and Disaster Preparedness*, Miller, Adame, & Moore used both VIT and the extended parallel process model (EPPM) of fear appeals to formulate a model for more effective disaster preparedness social action campaigns. Typical preparedness behaviors were discussed with emphasis on earthquakes and tornados. The results of the article showed that VIT and EPPM are promising models for use in shaping future campaigns for individual disaster preparedness (Miller et al., 2013). Supporting this idea, Crano published in 2014, along with Johnson and Siegel, expanding upon the VIT principle that categorizes individuals as vested if the attitude-object in question directly affects the attitude holder. In *Expanding the Reach of Vested Interest in Predicting Attitude-Consistent Behavior*, the authors posited that VIT can be expanded to include circumstances where individuals indirectly affected by an issue can also be vested in the attitude-object, thus increasing VIT's applicability to public policy and legislative issues (Johnson et al., 2014). Furthering this more practical application of VIT, Gordon wrote in *Veblen's Vested Interest and Power* that VIT can be used to analyze the elements of national power. Gordon analyzed Veblen's primary arguments regarding vested interest, intangible assets, and free income, then

tied these ideas not only to national power, but to national power, specifically within an economic context (Gordon, 2014).

A cadre of VIT theorists, including Crano, continued collective research in *Vested Interest and Environmental Risk Communication: Improving Willingness to Cope with Impending Disasters*. This article applied VIT to the issue of risk communication and preparedness for disasters, presenting a study that assessed differences between the inhabitants of two high-risk flood areas in Italy based on experience, risk perceptions, concerns, attitudes, and behavioral intentions. The findings indicated that high-risk area residents reported more experience and a more significant perception of risk and concern, though no discernable differences were found in actual preparedness behaviors (De Dominics et al., 2014). In a broader study, Balalaeva examined political competition and political agendas across 100 different countries over the course of 20 years through the lens of VIT. Balalaeva's 2015 article, *Political Competition, Agenda Power, and Incentives to Innovate*, showed that the number of political power holders and agenda leaders varies widely among the different political systems, electoral systems, and administrative structures. The functions of VIT provide a background explanation for the relative ease of innovation and entry into the political systems (Balalaeva, 2015). In the same vein, Godinez's article, *The Vested Interest Theory: Novel Methodology Examining US- Foreign Electoral Intervention*, detailed a rather unique interpretation of VIT, applying it to governments as opposed to individuals. This approach was used to examine not only the potential Russian intervention in the 2016 U.S. presidential election, but also the dozens of past interventions by the United States in the elections of other countries. The author proposed a threefold methodology for VIT in this context: the methods and tactics of a predator country, the stated justification for electoral intervention, and the magnitude of the election in relation to

global politics and power. Godinez's study showed the versatility of VIT in a variety of government policy applications, and that it could easily be translated from election policy to preparedness policy (Godinez, 2018).

Taking up Crano's torch among the lead VIT theorists, Adame and Miller cowrote two articles published in 2015 and 2016. In *Vested Interest, Disaster Preparedness, and Strategic Campaign Message Design*, the authors used VIT as a framework for designing and testing the effectiveness of television campaign messages related to disaster preparedness. The results of the research indicated that television public service announcements using subtle message variations can be effective in influencing attitudes about individual preparedness, especially regarding behavioral intentions and self-efficacy, which are two important variables associated with disaster preparedness (Adame & Miller, 2015). In *Vested Interest: Developing Scales for Assessing Flooding Preparedness*, Adame and Miller furthered this research by using VIT and the EPPM of fear appeals to develop research testing scales. These scales are created to measure specific variables within VIT, such as certainty, salience, immediacy, self-efficacy, response efficacy, and susceptibility. The article's results showed that the proposed scales return good to excellent reliabilities, which provided evidence that the VIT variables predict perceived salience and perceived preparedness (Adame & Miller, 2016).

This concludes the relevant literature on the VIT and how the VIT relates to subjects associated with individual preparedness. It is apparent that VIT has broad applications and can be used both to explain and predict behaviors in the context of individual behaviors and decision-making.

Rational Choice Theory. The second behavioral psychology theory to investigate is RCT, which asserts that the aggregate of all social behaviors is the result of individual decisions

and behaviors of individuals within the social system. Hechter and Kanazawa (1997) posited that individual actions within a social system are based on subjective choices, which are rational from the perspective of the individual. Actions are taken based on the expected return, or utility, that the action may bring back to the individual actor. In this theory, the state has little control over the outcomes of its collective decisions, as the choices of the individuals within the system drive everything (Hechter & Kanazawa, 1997, p. 191). Rational choice theory assumes that individuals act rationally, have distinct choices available to them, maximize their expected benefits from decisions, and have a clear understanding of the choices available and associated outcomes from those choices.

Relevant scholarship on the RCT began with Steiner's 1990 article, *Rational Choice Theories and Politics: A Research Agenda and Moral Question*. In this article, Steiner examined the prevalence of the study of RCT in America, as opposed to in Europe, and attempted to explain this phenomenon by providing an example from American politics. His argument was that RCT explains the major difference in the political lives of average Americans when compared to citizens of European countries (Steiner, 1990). In 1998, Ostrom furthered the study of RCT in his article, *A Behavioral Approach to the Rational Choice Theory of Collective Action*. He proposed expanding the use of RCT as a foundation for the study of other social dilemmas and collective action in America. His conclusion was that placing reciprocity, reputation, and trust at the core of a behavior theory of collective action, such as RCT, can explain past collective action responses to social dilemmas and perhaps predict future collective action responses (Ostrom, 1998).

Moving forward in time, the article *Theory, Stylized Heuristic or Self-Fulfilling Prophecy? The Status of Rational Choice Theory in Public Administration* by Hay (2004)

examined the connection between RCT and both positivism and naturalism. While stopping short of rejecting RCT, Hay asserted that RCT fails to adequately deduce cause-effect relationships between social influences. Instead, he proposed the use of RCT as an analytical strategy in public administration rather than its application as an explanatory theory (Hay, 2004).

More recent RCT scholarship began with Dietrich and List in their 2013 article, *A Reason-Based Theory of Rational Choice*. The authors assessed that RCT is missing a component, that of the reasons driving rational choices. They proposed a new reason-based theory to replace RCT, which calls for an assessment of an individual's preferences based on their motivating reasons. In this way, variations in an individual's preferences could be explained based on changes in their motivating reasons (Dietrich & List, 2013). Another article reassessed RCT in a different way. *Rational Choice Theory and Interest in the 'Fortune of Others'* by Paternoster, Jaynes, & Wilson (2017) looked at the preference differences specific to an individual's concern for other individuals. As a test for this reassessment, the authors used the intention and decision to drink and drive to evaluate concern for others. They concluded that, other variables aside, individuals with strong preferences of concern for others were less likely to drink and drive (Paternoster et al., 2017).

Other researchers used RCT to examine contemporary social issues. In *'Unfriend me Please!': Social Media Fatigue and the Theory of Rational Choice*, Logan, Bright, & Grau (2018) reviewed the idea of social media fatigue through the lens of RCT. The research findings indicated that increases in privacy concern among social media users lead to social media fatigue. However, the research also indicated that users' decisions to remain involved in social media despite privacy concerns reflects a belief that social media use provides more positive outcomes than the discontinuance of its use (Logan et al., 2018). Similarly, a 2019 article by

Carson, Dugan, & Yang investigated ideologically motivated crime through the lens of RCT. Their article, *A Comprehensive Application of Rational Choice Theory: How Costs Imposed by, and Benefits Derived from, the U.S. Federal Government Affect Incidents Perpetrated by the Radical Eco-Movement*, found that government action influences the perpetration of ideologically motivated crimes. Specifically, when government increases the costs associated with perpetuating these crimes, incidents decline (Carson et al., 2019). Finally, the 2020 article, *The Diversity of Rational Choice Theory: A Review Note*, written by Herfeld, presented a method of using RCT to explain issues in American economics. Herfeld did not assess RCT as a unified theory to explain everything, but suggested there are variants within RCT that have practical application in the study of economics (Herfeld, 2020). This concludes the relevant literature on the RCT and how the RCT relates to subjects associated with individual preparedness. The next section looks at literature related to TC.

The Tragedy of the Commons. The third behavioral psychology theory to investigate is the TC, which began as an economic theory with Lloyd's writings in the 1800s. The tragedy of the commons asserts that individuals consciously take irrational risks in the hope that fate will be on their side and any expected negative outcome will not come to pass. This is the idea that "lightning does not strike the same place twice." Hardin (n.d.; 1968) is one of the foremost authorities on the TC theory. He pointed to TC as the source of many of the problems of the late 20th century. The basic idea is that private property is better cared for because the owner of the property has a strong self-interest in caring for their property. By caring for it responsibly, they can reap the greater reward. The tragedy of the commons, or property that is available for use by every common person, suffers from the fact that nobody has a self-interest or personal responsibility for its preservation. Thus, the property becomes used, abused, and destroyed over

time (Hardin, n.d.). This theory can be applied in a broader sense to technology, warfare, and resources. For example, rising populations consume more and more food. Generally, the population has no self-interest in preserving—growing or shrinking—the food supply because there is no ownership of the supply as it is part of TC. Therefore, the food supply is abused to the point that it is in danger of failure as the population continues to increase (Hardin, 1968).

Recent scholarship on the TC began with a 2002 article by Milinski, Semmann, & Krambeck, *Reputation Helps Solve the 'Tragedy of the Commons.'* Like many other contemporary scholars, these authors used the example of climate change to illustrate the TC. In this article, they argued that indirect reciprocity, the notion of “give and you shall receive,” sustains a high level of cooperation within populations. Indirect reciprocity can counteract the TC if all individuals within the population are participating at the same level; contributions to the public good otherwise drop to nothing (Milinski et al., 2002). In *Understanding the Social Costs of Narcissism: The Case of the Tragedy of the Commons*, authors Campbell, Bush, Brunell, & Shelton examined the role of narcissism within commons dilemma situations. In two studies involving groups of two or four individuals, the authors found that increased instances of narcissism within the groups depleted TC more rapidly. They concluded that narcissism provides a benefit to the individual at long-term cost to other individuals and TC (Campbell et al., 2005).

A 2012 open letter by Tsai and McFadden provided an example of the TC from the medical field, specifically related to operating room resource management. The tragedy of the commons in this case was the availability of operating rooms. The authors compared the operating room to a farmer's market, implying that a few individuals taking advantage of this system would cause others to do the same, resulting in system failure (Tsai & McFadden, 2012). Examples like this aid in understanding more complex situations where the TC is applicable. A

2013 article by Ansari, Wijen, & Gray, *Constructing a Climate Change Logic: An Institutional Perspective on the 'Tragedy of the Commons,'* addressed issues in what is known as the transnational commons. This article examined the climate change field of study and its evolution across more than 40 years of study. In applying TC, it is evident that the development of the transnational commons is dependent on several factors, such as a view that international fates are connected and perceptions that individual behavior has ripple-like impacts across the globe (Ansari et al., 2013). Moving closer to the subject of disaster preparedness is an article by Cedergren, Lidell, & Lidell (2019), *Critical Infrastructures and the Tragedy of the Commons Dilemma: Implications from Institutional Restructuring on Reliability and Safety*. Using the Swedish railway system as an example, the authors attempted to understand the implications on the TC made by privatization of public critical infrastructure systems. The conclusion of this study was that privatization provides short-term monetary gains, but that critical infrastructure was no longer paid for by the public put it into a TC situation where individuals care less about it. Privatization removed the public's stake in TC as it was no longer funded by their tax dollars. Without a stake in TC, individuals did not care how it was treated, used, or abused (Cedergren et al., 2019).

Recent scholarship has shifted focus to avoid the tragedy of the commons. Writing in 2018, Murase and Baek search for a strategy to avoid the TC in an article, *Seven Rules to Avoid the Tragedy of the Commons*. This quantitative study assigned numerical values to the components of a social system to examine the interrelation of the variables in the system. The article found that a deterministic strategy can be employed to avoid TC dilemmas (Murase & Baek, 2018). In a similar study, Hintze, et al. (2020), *Inclusive Groups can Avoid the Tragedy of the Commons,*” used a public goods game to show at the micro level how the TC functions

within a social system. In this study, participants contributed funds to a pool, which was then distributed to the group equally. The study showed that those contributing less benefit more, and that those contributing more benefit less (Hintze et al., 2020). A recent example of the TC and the public goods game was seen in the ongoing response to the SARS-CoV-2 Coronavirus disease of 2019 (COVID-19) pandemic. In the 2021 article *'The Tragedy of the Commons': How Individualism and Collectivism Affected the Spread of the COVID-19 Pandemic*, by Maaravi, et al., the authors argued that cultural variances across countries contributed equally or greater to the spread of COVID-19 than other factors like population age or quarantine policies. The article examined data from 69 different countries, concluding that the more individualistic a country was, the more COVID-19 spread because these countries faced more challenges with individuals adhering to prevention measures. In this case, TC was the collective public health of the population. Individuals have a stake in their own health, but do not necessarily have a stake in the health of their neighbors and the greater community (Maaravi et al., 2021). This concludes the relevant literature on the TC and how the TC relates to subjects associated with individual preparedness.

Methodology

The final portion of this literature review examines sources related to the methodologies used in this study. These sources support the study by framing the policy evaluation, case study, and survey analysis processes. The first source is Tolley et al. (2016), from which the qualitative data analysis process is used in this study. In *Qualitative Methods in Public Health: A Field Guide for Applied Research*, Tolley et al. outline five steps for qualitative data analysis, which are reading, coding, displaying data, data reduction, and interpretation (Tolley et al., 2016, p. 173). The authors state that “qualitative analysis emphasizes how data fit together as a whole,

bringing together context and meaning” (Tolley et al., 2016, p. 175). To support the process described by Tolley et al., two additional sources were used. First is Freeman’s 2017 book, *Modes of Thinking for Qualitative Data Analysis*, which provides a description of five modes of thinking or qualitative analysis strategies to support qualitative data analysis. These modes of thinking are categorical, narrative, dialectical, poetical, and diagrammatical (p. 11). These modes of thinking provide an approach or perspective from which to use the qualitative data analysis process from Tolley et al. (Freeman, 2017). The second is Neuman’s 2009 book, *Social Research Methods: Qualitative and Quantitative Approaches*. This book has a wealth of information on research methods for social sciences research. Specific to this study, the qualitative data collection and analysis chapters aid both in understanding the qualitative data analysis process outlined by Tolley et al. and in resolving problems throughout the research process. Neuman’s perspective is practical and easy to apply to both field research and document analysis (Neuman, 2009).

There are additional sources that support the qualitative methods used in this study. In *A Narrative Policy Approach to Environmental Conservation*, Lawton and Rudd (2014) use the subject of environmental conservation to show how using narratives is effective in conveying the findings of qualitative research. This narrative approach is helpful in describing the findings of research related to disaster preparedness, since the subject is very nuanced. According to the authors, qualitative research narratives, based on solid empirical evidence, can tell a compelling story that drives positive changes in policy (Lawton & Rudd, 2014, p. 853). Another source supporting the use of qualitative methods is the 1999 article by Riad et al., entitled *Predicting Evacuation in Two Major Disasters: Risk Perception, Social Influence, and Access to Resources*. Here, the authors assert that quantitative, rather than qualitative, methods have been the most

dominant in past disaster-related research, wherein researchers look at the characteristics of a population to make statistical inferences on motivations, behaviors, and barriers. This emphasis on quantitative research highlights a potential shortfall in research findings related to disaster preparedness and emphasizes a need for additional qualitative research in this field (Riad et al., 1999). This conclusion is supported by Clark and Creswell in their 2008 book, *The Mixed Methods Reader*. The authors argue that qualitative research, though unable to derive statistical generalizations, is well-suited to highlight knowledge and experience related to disasters and preparedness for disasters (Clark & Creswell, 2008).

Additional sources were consulted to formulate methods specific to conducting the case studies for this research study. The first of these sources related specifically to case selection. Seawright and Gerring (2008) authored the article *Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options*. In this article, the authors describe seven procedures for case selection, each of which allows for a different approach to case analysis. The seven procedures are typical, diverse, extreme, deviant, influential, most similar, and most different. Seawright and Gerring assert that case selection and case analysis are closely related, arguing that the selection method must support the analysis method in order for the analysis to be truly representative. This is especially true when using a small sample to extrapolate findings to a larger population (Seawright & Gerring, 2008). There are similarities between the selection procedures of Seawright & Gerring and John Stuart Mill's methods of making logical deductions. In his 2013 book, *Analysis of Mr. Mill's System of Logic*, Stebbing gives detailed explanations and examples of Mill's methods. From this book, a reader gains an understanding of Mill's five methods, which are the method of agreement, the method of difference, the indirect method of difference (also known as the joint method of agreement and

difference), the method of residues, and the method of concomitant variations. Stebbing's explanations assist the reader in understanding Mill's methods in a way that they can be understood in a more modern context (Stebbing, 2013, pp. 70-73).

A key source for case study research and analysis is Yin's (2018) book, *Case Study Research and Applications: Design and Methods*. This book was originally published in 1984 and has been updated several times since then; it has become one of the primary sources for case study research. This book covers the entire case study research process, from case study design to collection of evidence to case study analysis to case study reporting. Yin also outlines the differences between single-case studies and multiple-case studies, asserting that a multiple-case study provides more compelling evidence than a single-case study when the study's purpose is to compare or replicate findings, making the multiple-case study a more robust research tool (Yin, 2018). There is additional support for the strength of multiple-case studies in the article *Multiple Case Studies* by Alqahtani and Qu (n.d.). Leaning heavily on Yin, the authors give a detailed and practical explanation of the use of the multiple-case study method for case study analysis. The authors also take a broad approach to the use of the case study method for various types of research; they also have a broad view of the types of cases that can be used for research, such as an individual, an event, or an entity (Alqahtani & Qu, n.d.).

The final set of methodological sources influence the policy evaluation methods used in this study. This study does not use a policy analysis per se, but rather a less in-depth analysis known as a policy evaluation. Howlett and Geist (2015) provide a good explanation of the method of policy evaluation. In their article, *Policy Cycle*, the authors define policy evaluation as "the objective, systematic, empirical examination of the effects ongoing policies and public programs have on their targets in terms of the goals they are meant to achieve" (Howlett & Geist,

2015, p. 291). Policy evaluation is just one component of the complete policy cycle, which the authors describe as a five-stage model. The stages are agenda setting, policy formulation, decision making, policy implementation, and policy evaluation. This cycle is more of a practical than academic cycle for policymakers to manage the entire process of policymaking. However, the policy evaluation stage is a helpful tool in analyzing policies from an academic perspective, especially when the goal is not to perform a complete policy analysis (Howlett & Giest, 2015). Additionally, a 2021 article by Ghazinoory and Aghaei entitled *Differences Between Policy Assessment & Policy Evaluation: A Case Study on Supportive Policies for Knowledge-Based Firms* investigates the differences and similarities between policy assessment and policy evaluation. The authors argue that assessment and evaluation have become synonymous, but have very different meanings and purposes. Assessment is a preliminary process that looks at all aspects of a policy to determine if further study is needed. Evaluation seeks to determine if the policy solution being evaluated has accomplished its intended purpose. The authors go on to describe the assessment and evaluation procedures in detail, which provides a road map of sorts for this study (Ghazinoory & Aghaei, 2021). This concludes the relevant literature related to methodology for this study.

Summary

This literature review shows a wide range of literature related to federal preparedness policy, research about individual preparedness, and research on the VIT. It shows both the government policy material and the academic research material on the preparedness issue. The Lord says, “Get yourself ready! Stand up and say to them whatever I command you. Do not be terrified by them, or I will terrify you before them” (Jeremiah 1:17, NIV). This verse and others like it show that it is God’s will for people to prepare for the worst and not to be afraid of how

difficult a task it may be. Further, in Ezekiel 38:7 God says, “Get ready; be prepared, you and all the hordes gathered about you, and take command of them” (Ezekiel 38:7, NIV). As policymakers, it is our responsibility to lead the effort to prepare for future disasters.

Preparedness has been widely promoted to Americans for decades by the DHS and FEMA. However, a consistent issue is that citizens either will not or cannot take the steps needed to prepare for emergency situations. NIMS dictates that responses are managed at the local level. In most cases, this means that a city or county is solely responsible for disaster response within their jurisdiction. The local civil authorities use the resources at their disposal, including those that can be borrowed from neighboring jurisdictions, until they run out of resources. Then they go to the state level for additional resources. States pull from other jurisdictions statewide, and request resources from other states through EMAC. When in-state and state-to-state resources are exhausted, then FEMA gets involved at the federal level, using federal resources and those requested from other countries through existing mutual aid treaties. The bottom-up approach for disaster response has been proven time and again to work well; why is preparedness not treated the same?

By designing a study based on VIT and oriented on modifications to existing preparedness policy, research can begin to show the impact of VIT. This can be supported by case studies of preparedness situations where VIT principles are at play, though they may not have been specifically considered during policy development. The federal government, to include DHS and FEMA, is a slow-moving beast when it comes to change. It is evident in this literature review that change is possible, and that the government has made efforts to improve preparedness policy to foster a preparedness mindset among Americans. It is also evident from the literature that there is a great deal more that needs to be improved to make preparedness

policy more effective in promoting and supporting individual and family preparedness. The gaps in the literature show that the application of VIT on the individual preparedness problem set has the potential for positive results and that continued modification to the existing approach, while helpful, is not solving the problem.

CHAPTER THREE: METHODS

Overview

Research and experience indicate that American individuals and families do not prepare for disasters, either at all or to the extent needed to survive disaster impacts. There is a disconnect between federal preparedness policy, which states individuals and families are a key component of overall community preparedness, and the actions taken—or not—by individuals and families to prepare. The purpose of this qualitative study is to understand how the failures of current preparedness policy contribute to the lack of individual and family preparedness and the political, social, and psychological factors that drive individuals and families to prepare—or not—for disasters.

Chapter 3 outlines the procedures used in this study. It discusses the design, restates the research questions, and describes the setting and participants for the study. The data collection methods are examined in detail followed by the data analysis steps. Finally, trustworthiness and ethical issues are presented to conclude the chapter.

Design

This study requires qualitative research methods to fully understand the extent to which federal preparedness policy affects community and family preparedness. Tolley et al. state that qualitative research's purpose "is to generate knowledge of social events and processes by understanding what they mean to people, exploring and documenting how people interact with each other and how they interpret and interact with the world around them" (2016, p. 4). The question, then, is what qualitative research strategy and design are most appropriate to investigate this topic? Freeman (2017) describes five modes of thinking, or strategies, for qualitative data analysis: categorical, narrative, dialectical, poetical, and diagrammatical

(Freeman, 2017, p. 11). This study seeks to understand the failures of past and current federal preparedness policy to drive preparedness behaviors among Americans. Of Freeman's five strategies, dialectical thinking is the best fit for this research. Freeman states, "Dialectical thinking seeks to uncover inherent tensions or contradictions that are believed to exist in humans as well as in societies, and put these in dialogue with each other for transformational purposes" (Freeman, 2017, p. 8). This method of thinking produces results that can drive policy change for the betterment of all Americans.

The design of this research focuses on examining past and current federal preparedness policy, which originates with the Office of the President, DHS, and FEMA. This study uses VIT as a framework to formulate a basis of understanding the reason or reasons that preparedness policies have not resulted in preparedness behaviors among Americans. This research uses case studies where individual preparedness either did or did not work well, showing the reasons for failure or success and highlighting areas where VIT provides an explanation. It is not possible to analyze the entirety of preparedness policy because each city, county, tribe, and state has its own policies, which are based on federal policy, but which are distinct from one another. Therefore, the focus is on federal policy with selected case studies from multiple jurisdictions—Colorado, Florida, and Washington—to illustrate failures and successes that can inform federal policy. The research design combined a detailed policy evaluation with case studies and survey analysis, using VIT to develop an understanding of the failures of current and past federal preparedness policies. An additional new survey was conducted to add to the body of knowledge related to individual and family preparedness among Americans.

The dependent variable in this study is the U.S. population's preparedness levels over time. To measure preparedness levels, this paper uses a combination of survey analysis, policy evaluation, and case study analysis. The survey analysis is the most helpful in directly measuring preparedness levels among the U.S. population. Based upon the analysis of ten selected surveys, an additional survey was developed with questions focused on preparedness knowledge, preparedness beliefs, preparedness behaviors, and preparedness actions. Survey respondents were presented with statements related to one of these four categories of preparedness and asked if they strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the statement as related to their own knowledge, beliefs, behaviors, and actions. Strongly agreeing equates to the highest level of preparedness, while strongly disagreeing equates to the lowest level of preparedness.

The independent or control variables for this study are age, gender, ethnicity, annual income, and level of education; these were selected because, according to previous literature, they could significantly affect individual and family preparedness levels (Eisenman et al., 2006; Miceli et al., 2008; Murphy et al., 2009; Paek et al., 2010; McNeill et al., 2013). Findings have been inconsistent in past research related to individual and family preparedness, especially as preparedness is or is not correlated with various demographic characteristics. Using age as an example, some research argues that preparedness levels decline as individuals age (Baker, 2011; Kohn et al., 2012), while other research suggests that preparedness levels increase as age increases (Norris et al., 1999; Ablah et al., 2009; Murphy et al., 2009). Further, there is limited research from U.S. and international surveys that demonstrates that older adults are significantly less prepared for disaster events (Loke et al., 2012; Al-Rousan et al., 2014; Kang, 2014). There

are numerous variables involved in individual and family disaster preparedness, making it challenging to predict preparedness levels based on a single variable like age (Wang, 2018).

Research Questions

The research questions for this study are:

RQ: What are the factors that influence Americans' willingness and ability to prepare for disasters?

RQa: What effect have federal preparedness policies had on Americans' disaster preparedness level?

RQb: What phenomena can explain a lack of preparedness among Americans?

RQc: How does VIT explain or predict the attitude-behaviors of Americans regarding disaster preparedness?

Rationale

This qualitative study uses secondary data for collection and analysis, which is organized into three categories. The first is policy evaluation, which includes federal preparedness policy documents primarily published by DHS and FEMA. The second is case studies, which includes detailed after-action reviews (AARs) from three selected disaster events: the 2013 floods in Boulder, Colorado; Hurricane Michael in Panama City, Florida in 2018; and the initial response to the COVID-19 pandemic in Kirkland, Washington, in 2020. The third is preparedness surveys, conducted across the US from 2010 to 2020 by FEMA, the Citizens' Corps, the CDC, and Columbia University's National Center for Disaster Preparedness (NCDP). An additional preparedness survey was developed and conducted as part of this research, with questions based on those used for analysis from the ten selected surveys.

It is important to note that quantitative, rather than qualitative, methods have been the most dominant in past disaster-related research, wherein researchers look at the characteristics of a population to make statistical inferences on motivations, behaviors, and barriers (Riad et al., 1999). Limited literature and a lack of systematic conclusions provides little help in developing meaningful hypotheses related to preparedness (Wang, 2018). Qualitative research, though unable to derive statistical generalizations, is well-suited to highlight knowledge and experience related to disasters and preparedness for disasters (Clark & Creswell, 2008).

Policy Evaluation

The setting for policy evaluation is represented by the current (2021) federal preparedness policy environment. This began with PPD-8, signed by President Obama in 2011. Using PPD-8, FEMA and DHS produced the NPS, the NPG, the annual NPR, and the supporting National Planning Frameworks (NPIF). Federal preparedness policy forms the core of all other preparedness policies at the state, tribal, municipal, and community levels of American society. There are thousands of these lower-level preparedness policies, which presents extreme difficulty to anyone attempting a holistic analysis of all preparedness policies. Analyzing federal preparedness in this study gets to the root of relevant policy to form a foundation for further study. This is an important foundation to understand “what is supposed to happen” versus “what is happening” regarding individual and family preparedness.

Case Studies

The selected case studies provide three distinct settings for the study of preparedness in America. At its core, preparedness intends to reduce the impact of a disaster event on those individuals and families present within a disaster zone. The degree to which these individuals and families are prepared for the results of a disaster event is the degree to which they are able to

survive the disaster's impacts. To study preparedness levels in the absence of a disaster is challenging at best, impossible at worst. However, in the aftermath of a disaster, it becomes obvious who was prepared and who was not. This provides key insights for the study of preparedness. The three case studies selected for this study represent a range of locations—and, thus, a range of demographics—and a range of disasters. All the case studies involve catastrophic natural disasters that occurred between 2010 and 2020 in the United States involving multiple jurisdictions within the affected area. First is the Boulder, Colorado floods of 2013. Second is Hurricane Michael, which struck Panama City, Florida in 2018. Third is the COVID-19 pandemic, which affected the entire world beginning in 2020; for this study, the focus is on the city of Kirkland, Washington because it was the first U.S. city with a major COVID-19 outbreak.

Preparedness Surveys

To examine the dependent variable, the U.S. population's preparedness levels over time, it is necessary to select a wide range of surveys conducted by several key organizations involved in the study of preparedness. For scope, the selected surveys were conducted between 2010 and 2020 to ensure the surveys' results were relevant to current federal preparedness policy and to the selected case studies. The majority of these surveys were conducted by FEMA, either directly or through the Citizens' Corps. There are also surveys from the CDC and the NCDP. The surveys are more consistent in the latter half of the selected decade than in the early half of the decade, but the selected surveys generally span the entirety of the period of 2010 to 2020.

An additional survey was developed using the results of the ten selected surveys. This survey consisted of sixteen questions, of which five questions were related to the demographics of the respondents and 11 questions were related to disaster preparedness topics. The survey was designed and conducted using surveyplanet.com, which allowed the survey to be sent out via

email and social media using a survey link. The selected surveys and the additional survey are listed in Table 1 below.

Table 1

Preparedness Survey Details

Survey Title	Sponsor	Year Published	Population	Participants	Mode
Lions, Lambs & Lone Wolves: Archetypical Disaster Roles and Their Relationship to Preparedness Behaviors	NCDP	2010	National	2,931	Phone
The American Preparedness Project: Where the U.S. Public Stands in 2011 on Terrorism, Security, and Disaster Preparedness	NCDP	2011	National	1,000	Phone
Household Preparedness for Public Health Emergencies—14 States, 2006–2010	CDC	2012	14 States (CT, DE, GA, LA, MD, MS, MT, NC, NE, NH, NV, NY, PA, TN)	93,831	Phone
Personal Preparedness in America - Findings from the 2012 FEMA National Survey	FEMA	2013	National	2,013	Phone
Preparedness in America - Research Insights to Increase Individual Organizational and Community Action	FEMA	2014	National	11,695	Phone
American Preparedness Project: Where the U.S. Public Stands in 2015	NCDP	2016	National	1,048	Phone
Preparedness in America - 2017 National Household Survey Results	FEMA	2017	National	5,042	Phone
Preparedness in America - 2018 National Household Survey Results	FEMA	2018	National	5,003	Phone
Preparedness in America - 2019 National Household Survey Results	FEMA	2019	National	5,025	Phone
2020 National Household Survey—Key Findings	FEMA	2020	National	5,020	Phone
2022 Individual and Family Disaster Preparedness in America Survey	Surveyplanet.com	2022	Representative	237	Internet

CDC = Centers for Disease Control and Prevention; CT = Connecticut; DE = Delaware; FEMA = Federal Emergency Management Agency; GA = Georgia; LA = Louisiana; MD = Maryland; MS = Mississippi; MT = Montana; NC = North Carolina; NCDP = National Center for Disaster Preparedness; NE = Nebraska; NH = New Hampshire; NV = Nevada; NY = New York; PA = Pennsylvania; TN = Tennessee; U.S. = United States

From each of these surveys is extracted relevant data related to preparedness perceptions, preparedness behaviors, disaster experience, and disaster and preparedness knowledge. Many of these surveys are conducted annually by one agency, so the content is very similar and comparable from year to year. In these cases, comparison of the data from multiple years is a simple task. However, there are other surveys from different agencies that have a different content structure. To overcome these challenges, this study focuses on the disaster preparedness themes previously listed to focus the information to be captured and to compare information that is similar enough from which to draw conclusions. The additional survey was developed using the same themes, which makes comparison of the results a simple task.

Participants

Primarily, the data sources for this study are secondary sources, surveys conducted by government and academic institutions with roles related to disaster preparedness. This study uses ten surveys from three different agencies, all of which were published between 2010 and 2020. Six of the surveys are from FEMA, three are from the NCDP, and one is from the CDC. All but one of the surveys represents the national U.S. population. The exception is the CDC survey, which includes participants from 14 states. The smallest number of survey participants in the ten surveys is 1,000 people, while the largest number of survey participants is over 93,000. The additional survey was conducted in 2022 as an independent academic survey using surveyplanet.com, with participants from all over America. Specific location information was not collected in the survey. The number of participants for the additional survey was 237. In sum, the

number of participants across the 11 surveys is 132,845 people. The demographics of the survey populations are explained in Table 2 and Table 3 below.

Gender Breakdown

Table 2

Preparedness Survey Demographics – Gender

Survey Title	Sponsor	Year Published	Participants	Gender		Population	
Lions, Lambs & Lone Wolves: Archetypical Disaster Roles and Their Relationship to Preparedness Behaviors	NCDP	2010	2,931	Male	Information Not Available		National
				Female			
The American Preparedness Project: Where the U.S. Public Stands in 2011 on Terrorism, Security, and Disaster Preparedness	NCDP	2011	1,000	Male	Information Not Available		National
				Female			
Household Preparedness for Public Health Emergencies—14 States, 2006–2010	CDC	2012	93,831	Male	35,529	37.9%	14 States (CT, DE, GA, LA, MD, MS, MT, NC, NE, NH, NV, NY, PA, TN)
				Female	58,302	62.1%	
Personal Preparedness in America - Findings from the 2012 FEMA National Survey	FEMA	2013	2,013	Male	966	48.0%	National
				Female	1,047	52.0%	
Preparedness in America - Research Insights to Increase Individual Organizational and Community Action	FEMA	2014	11,695	Male	Information Not Available		National
				Female			
American Preparedness	NCDP	2016	1,048	Male	508	48.5%	National
				Female	540	51.5%	

Project: Where the U.S. Public Stands in 2015							
Preparedness in America - 2017 National Household Survey Results	FEMA	2017	5,042	Male	2,638	52.3%	National
				Female	2,405	47.7%	
Preparedness in America - 2018 National Household Survey Results	FEMA	2018	5,003	Male	2,507	50.1%	National
				Female	2,443	48.8%	
Preparedness in America - 2019 National Household Survey Results	FEMA	2019	5,025	Male	2,631	52.4%	National
				Female	2,340	46.6%	
2020 National Household Survey—Key Findings	FEMA	2020	5,020	Male	2,621	52.2%	National
				Female	2,307	46.0%	
2022 Individual and Family Disaster Preparedness in America Survey	Surveyplanet.com	2022	237	Male	81	34.2%	Representative
				Female	152	64.1%	
Total			132,845	Male	47,481	35.7%	
				Female	69,536	52.3%	

CDC = Centers for Disease Control and Prevention; CT = Connecticut; DE = Delaware; FEMA = Federal Emergency Management Agency; GA = Georgia; LA = Louisiana; MD = Maryland; MS = Mississippi; MT = Montana; NC = North Carolina; NCDP = National Center for Disaster Preparedness; NE = Nebraska; NH = New Hampshire; NV = Nevada; NY = New York; PA = Pennsylvania; TN = Tennessee; U.S. = United States

Ethnicity Breakdown

Table 3

Preparedness Survey Demographics – Ethnicity

Survey Title	Sponsor	Year Published	Participants	Ethnicity		Population
Lions, Lambs & Lone Wolves: Archetypical Disaster Roles and Their Relationship to Preparedness Behaviors	NCDP	2010	2,931	White	<i>Information Not Available</i>	National
				Black		
				Hispanic		
				Other		
The American Preparedness	NCDP	2011	1,000	White	<i>Information Not Available</i>	National
				Black		

Project: Where the U.S. Public Stands in 2011 on Terrorism, Security, and Disaster Preparedness				Hispanic			
				Other			
Household Preparedness for Public Health Emergencies—14 States, 2006–2010	CDC	2012	93,831	White	77,536	82.6%	14 States (CT, DE, GA, LA, MD, MS, MT, NC, NE, NH, NV, NY, PA, TN)
				Black	8,703	9.3%	
				Hispanic	2,559	2.7%	
				Other	4,206	4.5%	
Personal Preparedness in America - Findings from the 2012 FEMA National Survey	FEMA	2013	2,013	White	1,329	66.0%	National
				Black	221	11.0%	
				Hispanic	282	14.0%	
				Other	181	9.0%	
Preparedness in America - Research Insights to Increase Individual Organizational and Community Action	FEMA	2014	11,695	White	<i>Information Not Available</i>		National
				Black			
				Hispanic			
				Other			
American Preparedness Project: Where the U.S. Public Stands in 2015	NCDP	2016	1,048	White	671	64.0%	National
				Black	132	12.6%	
				Hispanic	143	13.6%	
				Other	102	9.8%	
Preparedness in America - 2017 National Household Survey Results	FEMA	2017	5,042	White	3,774	74.9%	National
				Black	670	13.3%	
				Hispanic	305	6.0%	
				Other	293	5.8%	
Preparedness in America - 2018 National Household Survey Results	FEMA	2018	5,003	White	3,310	66.2%	National
				Black	628	12.6%	
				Hispanic	710	14.2%	
				Other	355	7.1%	
Preparedness in America - 2019 National Household Survey Results	FEMA	2019	5,025	White	3,703	73.7%	National
				Black	540	10.7%	
				Hispanic	340	6.8%	
				Other	442	8.8%	
	FEMA	2020	5,020	White	3,511	69.9%	National

2020 National Household Survey—Key Findings				Black	439	8.7%	
				Hispanic	634	12.6%	
				Other	436	8.7%	
2022 Individual and Family Disaster Preparedness in America Survey	Surveypl net.com	2022	237	White	189	79.7%	Represent- ative
				Black	12	5.1%	
				Hispanic	14	5.9%	
				Other	14	5.9%	
Total			132,845	White	94,023	70.8%	
				Black	11,345	8.5%	
				Hispanic	4,987	3.8%	
				Other	6,029	4.5%	

CDC = Centers for Disease Control and Prevention; CT = Connecticut; DE = Delaware; FEMA = Federal Emergency Management Agency; GA = Georgia; LA = Louisiana; MD = Maryland; MS = Mississippi; MT = Montana; NC = North Carolina; NCDP = National Center for Disaster Preparedness; NE = Nebraska; NH = New Hampshire; NV = Nevada; NY = New York; PA = Pennsylvania; TN = Tennessee; U.S. = United States

Case selection and case analysis are closely related in case study research; choosing cases often sets the agenda for the study of the chosen cases. Most case studies use small samples to extrapolate findings for a larger population, which requires the case to be representative of a much larger set of cases. This presents several challenges in case selection, not the least of which is that it is quite difficult to locate a truly representative case. Also, once selected, cases must have variation in relevant dimensions and the researcher must be able to separate the case from any background information so the distinction between the population within the case and the population outside the case is clear (Seawright & Gerring, 2008, p. 294).

Seawright & Gerring (2008) outline seven methods of case selection: typical, diverse, extreme, deviant, influential, most similar, and most different (pp. 299-306). A typical, or representative, case selection method focuses on a stable cross-case relationship (Seawright & Gerring, 2008, p. 299). A diverse case selection method aims to achieve maximum variance within certain case dimensions, which requires at least two cases (Seawright & Gerring, 2008, p.

300). In the extreme, or unusual, case selection method a case is chosen due to some extreme or unusual value within either the dependent or independent variable under study (Seawright & Gerring, 2008, p. 301). The deviant, or anomalous, case selection method chooses a case that shows a surprising value based on a chosen theory (Seawright & Gerring, 2008, p. 302). The influential case selection method chooses cases that are influential within an existing cross-case theory, rather than formulating a new theory (Seawright & Gerring, 2008, p. 303). Similar to the diverse method, the most similar case selection method uses two or more cases that are similar in all variables except the variable of interest (Seawright & Gerring, 2008, p. 304). Conversely, the most different case selection method looks for cases that are the most different from one another in all variables (Seawright & Gerring, 2008, p. 306).

For this study, the diverse case selection method is the most appropriate and is used for selecting three cases. According to Seawright & Gerring (2008), this method calls for selecting cases that “are intended to represent the full range of values characterizing X, Y, or some particular X/Y relationship” (p. 300). This research uses preparedness levels over time as the dependent variable, so the selected cases must have a preparedness component that can be correlated with any number of independent variables, such as emergency supplies, preparedness knowledge, or disaster experience. The diverse method resembles John Stuart Mill’s joint method of agreement and difference (Seawright & Gerring, 2008, p. 307).

Mill outlined five methods of making logical deductions. Stebbing (2013) provides modern explanations of Mill’s methods. First is the method of agreement, where two or more cases of the phenomenon being investigated have only one variable in common, that variable is the cause of the phenomenon (Stebbing, 2013, p. 69). Second is the method of difference, where one case shows the phenomenon being investigated and a second case does not show the

phenomenon being investigated, and the two cases have all variables in common except one, that one variable is the cause, at least in part, of the phenomenon (Stebbing, 2013, p. 69). Third is the indirect method of difference, also known as the joint method of agreement and difference, which is a combination of the first two methods. In this method, there are two or more cases showing a phenomenon which have one variable in common and there are two or more cases that do not show the phenomenon and have no commonalities except that the same variable is absent. Here, the variable in which the two sets of cases differ is the cause, at least in part, of the phenomenon being investigated (Stebbing, 2013, p. 70). Fourth is the method of residues, which is a modification of the method of difference. When the method of difference fails to fully identify the causal variable, the method of residues can be used to examine additional variables to determine the variable or variables that cause a phenomenon under investigation (Stebbing, 2013, pp. 70-71). Fifth is the method of concomitant variations, in which any phenomenon that varies when another phenomenon varies is either a cause or an effect of that phenomenon; this method is more about comparing phenomena than analyzing variable associated with a single phenomenon (Stebbing, 2013, pp. 71-72).

Yin (2018) describes two variations of case study: single-case study and multiple-case study. Single-case studies use a single case to understand unusual, critical, longitudinal, or revelatory cases. Multiple-case studies use two or more cases or replications across cases to investigate a single phenomenon (Yin, 2018; Alqahtani & Qu, n.d.). This research investigates individual and family preparedness among Americans, which is not specific to any demographics, geography, type of disaster, or chronology. For these reasons, a multiple-case study is the most appropriate method to study preparedness in a way that can approach representative of the nation. The two variations use the same methodological framework, but

differ mainly in the research design (Yin, 2018). According to Yin, the cases selected for a multiple-case study must either predict similar results, known as a literal replication, or predict contrasting results for reasons that can be anticipated, known as a theoretical replication (2018, p. 55). For this research, the selected cases predict similar results, that despite federal policy Americans are generally not prepared for disasters, making this multiple-case study a literal replication design. Yin further asserts that a single-case studies provide much less compelling evidence than multiple-case studies when the study's purpose is to compare or replicate findings, making the multiple-case study a more robust research tool (2018). In the realm of federal preparedness policy, a single-case study would produce only minimal evidence to prove or disprove the assertion that federal policy does not drive preparedness behaviors; a multiple-case study certainly provides more robust evidence.

So, for this study, case studies are selected using the diverse method, similar to Mill's joint method of agreement and difference, and analyzed using a multiple-case study method for analysis. The dependent variable across these cases is level of preparedness among individuals and families. The selected case studies meet four main criteria. First, the case studies will span different years within the period under study, 2010 to 2020. More recent case studies show that the preparedness issues are a current problem. To meet these criteria, the case studies are from 2013, 2019, and 2020. Second, the case studies will present a range of geographical locations, so the studies are representative in nature. Case studies from one state or region may not apply to another very different region. To meet these criteria, the case studies are from Florida, Colorado, and Washington. Third, the case studies will represent different disaster scenarios, which illustrate that preparedness is necessary for a variety of circumstances. To meet these criteria, the case studies are from a hurricane, a flood, and a pandemic influenza outbreak. These are all

naturally occurring disasters, which are very different in nature, but which have similar impacts on individuals and families related to preparedness. Fourth, the case studies will have enough information available to undertake good quality research. Many candidates that met the first three criteria did not meet this fourth criterion. The selected case studies have a wide variety and amount of information to complete this study.

Procedures

Before any data were collected, approval from Liberty University's Institutional Review Board (IRB) was needed. Once IRB approval was granted, the study could begin. Tolley et al. (2016) outlined five steps associated with qualitative data analysis: reading, coding, displaying, reduction, and interpretation. These five steps were used to guide data analysis for this study.

Step one was reading, which Tolley et al. describe as "reading and rereading each set of notes or transcripts until you are intimately familiar with the content, noting content and quality and identifying patterns" (Tolley et al., 2016, p. 176). For the study of current and past preparedness policy, information was collected from official presidential, DHS, and FEMA documents, storing information on PDF files with analysis in a running annotated bibliography. This included analysis of the key policy documents and associated legislation with an emphasis on those portions of policy oriented on preparedness in general and individual and family preparedness specifically. To support this, a timeline was created showing the chronology of policy along with source documents. Next, three case studies were selected to highlight both successes and failures of preparedness policy. For the chosen case studies, official documents were gathered, including formal and informal AARs for disaster response operations. After the initial reading, additional research was conducted for each case study to find detailed source information to fill in gaps in case study data. Finally, surveys were selected from the FEMA

survey database and other sources such as the CDC and Columbia University's NCDP. Dozens of surveys were reviewed for applicability to the research subject before the ten most appropriate surveys were selected. The selected surveys were reviewed in detail with specific focus on preparedness-related responses and similar questions across multiple surveys. This analysis showed the level of preparedness among Americans and highlighted trends in the preparedness data. The result of this step was a foundational understanding of the preparedness policy environment, which provided context for both the case studies and the survey reviews.

Step two was coding, where the researcher identifies key themes in their selected sources. Tolley et al. described codes as “street signs inserted into the margins of hand-written notes or typed after segments of text to remind you where you are and what you see” (Tolley et al., 2016, p. 179). This is in line with Neuman's (2009) sixth step in qualitative fieldwork, when researchers group and organize information into categories that address their working hypothesis (Neuman, 2009). Broad categories in the selected topic included preparedness policy, behavioral psychology, case studies, and successes and failures. Within these broad categories, a thematic approach was used to code the information. The themes were based on VIT, identifying attitude-objects and attitude-behaviors, and on the results of the surveys, especially where there were common substantive questions between multiple surveys that could be directly compared. General themes that emerged were knowledge, beliefs, and behaviors related to disaster preparedness.

Step three was displaying data. According to Tolley et al., this step involves “laying out or taking an inventory of what you know related to a theme; capturing the variation, or richness, of each theme; and noting differences between individuals or among subgroups” (Tolley et al., 2016, p. 199). Freeman (2017) addressed the importance of this step, asserting that all research

includes data organization and recognition, which then translates to findings (Freeman, 2017, p. 3). However the data are collected, the researcher must be able to draw conclusions from the data, which is most easily accomplished through displaying data. Through displaying data, the themes became more clear and distinct. It became evident that disaster knowledge and experience were related to preparedness behaviors.

Step four was data reduction, or distilling information into its essential relationships and concepts. The object of step four, according to Tolley et al., “is to get an overall sense of the data and distinguish central and secondary themes, separating the essential from the nonessential” (Tolley et al. 2016, p. 204). This was accomplished by observing common themes and trends in the case studies related to preparedness and in the survey responses. The survey results and case study results were compared to the policy evaluation to show the difference between what policy calls for and what is actually happening in America related to individual and family disaster preparedness. This analysis was conducted through the lens of VIT.

Step five was interpretation, which Tolley et al. asserts focuses on three issues: “(1) how to arrive at the essential meanings of qualitative data, (2) how to ensure that interpretation is trustworthy, and (3) how to interpret data in a study that uses both qualitative and quantitative methods” (Tolley et al. 2016, p. 207). This step was emphasized by Lawton and Rudd (2014). They described how qualitative research narratives, based on solid empirical evidence, can tell a compelling story that drives positive changes in policy (Lawton & Rudd, 2014, p. 853). Lawton and Rudd state, “narratives are accepted by groups depending on the extent to which they accord with their shared beliefs and policy motivations [and] the relevance of evidence-based narratives depends on their relevance to decision-making bodies” (Lawton & Rudd, 2014, p. 853). In public policy research, the researcher must always strive to generate research findings that not only

further the academic study of policy, but also provide credible information upon which to base policy changes.

The Researcher's Role

I have been working in homeland security and emergency management related fields for over 10 years as a member of the Army National Guard. I obtained a Master of Arts degree in Homeland Security from Northeastern University in 2017, with a focus on emergency management and geographical information systems. I also obtained a Master of Arts degree in Security Studies from the Naval Postgraduate School's Center for Homeland Defense and Security in 2017, with a focus on homeland defense and homeland security. I have worked closely with state-level emergency management agencies, FEMA, DHS, the Department of Defense (DOD), and the National Guard to plan and prepare for potential future disasters. This work included planning, leading, and participating in dozens of preparedness training events and exercises all over America. As a guardsman, I have been activated to respond to multiple disaster events, including a major landslide in 2014 and civil disturbances in 2020 and 2021.

Through this work, I met with individuals to discuss the role of preparedness in a disaster response. I found time and again that most people do not prepare for disasters, whether they are aware of the importance of this or not. I have a personal bias against federal preparedness policies because I do not believe they work as intended. In this study, I reduced or eliminated this bias by focusing on the factual information obtained through policy evaluation and case studies rather than my own knowledge and experience. In addition, I hold a bias that individuals and families do not generally prepare for disasters. As I have never studied data related to this, my bias was based on experience and anecdotal evidence. I eliminated this bias by focusing on the data from the preparedness surveys, which might go against my preconceived perceptions.

I hold strong personal beliefs related to preparedness, which are based on a Biblical worldview. Specifically, the principle of self-government calls for individuals and families to govern themselves rather than waiting for the government to care for or regulate their activities. Preparedness from this perspective is an individual responsibility, not a responsibility of the government. I also believe in community over government. The fact that preparedness policy is driven from the top down rather than from the bottom up is something to which I am opposed. Communities, made up of families, should care for and discipline their own without the need for the government to step in. These views may color my opinions on preparedness policy and activities, but they did not impact on the results of this factually based study.

Data Collection

This study uses policy evaluation, survey analysis, and case studies to determine the factors that drive individual and family preparedness. The plan for data collection and storage was straightforward. For the policy evaluation, the focus was on collection of information from official presidential, DHS, and FEMA documents and storing this information as portable document format (PDF) files with analysis in a running annotated bibliography. It was appropriate to create a timeline showing the chronology of policy, along with source documents, to aid in evaluating policy impacts. For the case studies, official documents, such as local preparedness and response plans or formal and informal AARs, for disaster response operations were collected and stored as PDF files with analysis in a running annotated bibliography. News media documents from online and print sources were converted to PDF format and stored in the same manner. For the surveys, the results of each survey and its raw data (where attainable) were stored in PDF format with both a running annotated bibliography and spreadsheets to store relevant data points. The documents were then coded to determine broad categories within the

selected topic, which included preparedness policy, behavioral psychology, case studies, and successes and failures. Within these broad categories, a thematic approach was used to code the information. The themes were based on VIT, identifying attitude-objects and attitude-behaviors, and on the results of the surveys, especially where there were common substantive questions between multiple surveys that could be directly compared. General themes that emerged were knowledge, beliefs, and behaviors related to disaster preparedness.

Survey/Questionnaire

This study used a disaster preparedness survey, which was developed based on an analysis of previous FEMA, CDC, and NCDP national surveys. This survey consisted of 16 questions, 11 of which were related to preparedness and five of which were related to the demographics of the respondents. The demographic questions facilitated a comparison between the participants in the selected surveys and the participants in the additional survey. The preparedness questions fell into four categories based on the themes developed from analysis of the 10 selected surveys; these categories are preparedness knowledge, preparedness beliefs, preparedness behaviors, and preparedness actions. The survey was sent out through email and on social media (e.g., Facebook), allowing participants to complete the survey on the internet on either a computer or mobile device. For the preparedness questions, respondents were presented with a statement and asked if they strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with the statement. For the demographic questions, the responses were more specific to certain demographic categories. The survey questions are listed below:

The following questions relate to an individual's or family's personal beliefs about disasters and preparedness.

1. I believe that there is a risk of a major disaster event occurring in or near my home. A major disaster could include an earthquake, tornado, hurricane, wildfire, flood, severe storm, or other related event.

2. I believe that preparing for a major disaster event will help me and my family survive the disaster's effects. Preparing could include making a plan, practicing our plan, gathering supplies, or other related preparedness activities.

3. I have set aside financial resources (i.e., money) to have on hand for a major disaster event.

The following questions relate to an individual's or family's personal knowledge about disasters and preparedness.

4. I have received or sought out information related to disasters and/or preparedness in my area. This could include internet research, calling local authorities, or printed materials such as brochures or pamphlets.

5. I have personal or family experience with major disaster events. This could include personally experiencing a major disaster event or having a family member or loved one personally experience a major disaster event.

The following questions relate to behaviors individuals and families have engaged in which relate to disaster preparedness.

6. I have made an emergency plan for myself and/or my family that addresses what to do during a major disaster event. This plan could be written, typed, or verbal.

7. I have spoken with other people about getting prepared for a major disaster event. These conversations could be either general or specific in nature, but are related in some way to disaster preparedness.

8. Based on your assessment of your disaster preparedness beliefs, knowledge, and behaviors, which stage of preparedness would best fit you and/or your family?

The following questions relate to actions individuals and families have taken to prepare for a disaster.

9. I have gathered supplies, such as food, water, and medical supplies, to last three or more days in the event of a major disaster.

10. I have attended a local preparedness meeting or training event, or participated in a local emergency drill.

11. I have purchased homeowner's or renter's insurance and have purchased hazard-specific insurance such as flood insurance or earthquake insurance.

The following questions are for demographic purposes only.

12. What is your age?

13. What is your gender?

14. What is your ethnicity?

15. What is your approximate annual income?

16. What is your highest level of education?

This survey was developed and conducted using surveyplanet.com, which is a free website that allows users to create, conduct, and analyze any kind of survey. Multiple-choice questions were used for all survey questions to allow for a direct comparison of the responses with the responses to the secondary surveys. After initial question development, the survey was tested for content and face validity through a review by members of the Liberty University faculty and piloting by several people who would not be future survey participants. Feedback from this process was used to modify some of the questions to avoid confusion and ensure the

survey would provide the information needed for this study. The survey took about 10 to 15 minutes for a participant to complete.

Document Analysis

Document analysis was conducted in two phases. The first phase was the policy evaluation of federal preparedness policy documents from the White House, DHS, FEMA, and other federal agencies. The documents used were strictly policy documents rather than academic or professional research. The goal with this phase was to fully understand existing federal preparedness policy as it is now, rather than as it was before or as it should be in the future. Policy evaluation is defined by Howlett and Geist as “the objective, systematic, empirical examination of the effects ongoing policies and public programs have on their targets in terms of the goals they are meant to achieve” (Howlett & Giest, 2015, p. 291). This is not a policy analysis; rather, it is an evaluation of federal preparedness policy to determine if these policies have achieved their intended goals, or not. Ghazinoory and Aghaei (2021) state that “the evaluation approach is a set of statements or activities that seek to determine whether the solution is correct and whether the intended objectives have been achieved” (p. 1). This evaluation was carried out through the lens of individual and family preparedness to determine the effectiveness of each policy to drive preparedness behaviors among American individuals and families.

The second phase was case study analysis, which involved a detailed analysis of the available official documents and secondary information from news media for each of the three case studies. The case studies were the 2013 floods in Boulder, Colorado; Hurricane Michael in 2018 in Panama City, Florida; and the COVID-19 pandemic outbreak in Kirkland, Washington. These case studies showed the response efforts for natural disasters that have widespread impacts

on multiple local jurisdictions. They showed the results of individual preparedness when a disaster occurs, with those who had prepared suffering fewer shorter-term impacts than those who had not prepared.

In each of these phases, the five steps of qualitative data analysis outlined by Tolley et al. (2016) were used. First, all available documents were read and reread to gain knowledge of the subject matter and determine gaps in the available information. Further research and reading were done to find information to fill these gaps in knowledge. Second, documents were coded to identify key themes and categories in the documents. Broad categories of preparedness policy, behavioral psychology, case studies, and successes and failures gave way to themes based on VIT, which were knowledge, beliefs, and behaviors related to disaster preparedness. Third, data was displayed to add organization to the themes based on the available information. This helped draw initial conclusions from the data, making the themes more clear and distinct. Fourth, data was reduced into essential relationships and concepts. Using VIT as a lens for analysis, the themes began to show correlations, such as a correlation between preparedness experience and gathering disaster supplies. Fifth and finally, data were interpreted to draw final conclusions. Themes were refined and defined and then used to extrapolate findings from the research.

Secondary Surveys

This study used 10 surveys spanning the period of 2010 to 2020. These surveys were retrieved from FEMA, the NCDP at Columbia University, and the CDC. All were open source to be used in research by anyone. All but one of the surveys provided a national representative sample for the United States. The exceptional survey provided a sample for 14 states, making it largely representative. The 10 surveys were conducted over the phone using a random number dialer and all asked questions related to disaster preparedness attitudes and behaviors.

These surveys were located using two different methods. First, the preparedness research section of FEMA's Ready.gov website was consulted, which is a good starting point for preparedness research. This is where FEMA stores most of its research efforts and results for studies funded by FEMA. Second, FEMA's *Disaster Preparedness Surveys Database: Households, Businesses, and Schools* (2010) was used to locate older and more obscure surveys related to preparedness. This database lists a wide variety of surveys from many different agencies and institutions, which filled in the gaps between the FEMA national surveys, so there is a representative sample for each year from 2010 to 2020.

Data Analysis

Tolley et al. (2016) outlined five steps associated with qualitative data analysis: reading, coding, displaying, reduction, and interpretation. These five steps were used to guide data analysis for this study. Step one was reading, which means reading each set of documents until the reader becomes familiar with their content, quality, and patterns (Tolley et al., 2016). For the study of current and past preparedness policy, information was collected from official presidential, DHS, and FEMA documents, storing information on PDF files with analysis in a running annotated bibliography. To support this, a timeline was created showing the chronology of policy along with source documents. Also, between two and four case studies were selected to highlight both successes and failures of preparedness policy. For the chosen case studies, official documents were gathered, including local preparedness and response plans. Additionally, information was gathered from formal and informal AARs for disaster response operations.

Step two was coding, where the researcher identifies key themes in their selected sources. Codes are like directional markers placed into hand-written or typed notes as a reminder of the information contained therein and its context in the overall study (Tolley et al., 2016). This is in

line with Neuman's (2009) sixth step in qualitative fieldwork, when researchers group and organize information into categories that address their working hypothesis (Neuman, 2009). To develop answers for the research questions presented in this study, the collected data were thoroughly analyzed and coded. During the initial coding process, the codes used were based on keywords from the policies, surveys, and case studies. Once coding was complete, the codes were reduced and converted to themes based on the frequency of the codes. Evaluation of the themes was based on policy, survey, and case study categories. Broad categories in the selected topic included preparedness policy, behavioral psychology, case studies, and successes and failures. Within these broad categories, a thematic approach was used to code the information. The themes were based on VIT, identifying attitude-objects and attitude-behaviors, and on the results of the surveys, especially where there were common substantive questions between multiple surveys that could be directly compared.

Step three was displaying data. This step involved inventorying all collected information within a theme, noting variations within each theme, and describing differences among individuals or groups (Tolley et al., 2016). Freeman (2017) addressed the importance of this step, asserting that all research includes data organization and recognition, which then translates to findings (Freeman, 2017, p. 3). However the data are collected, the researcher must be able to draw conclusions from the data, which is most easily accomplished through displaying data.

Step four was data reduction, or distilling information into its essential relationships and concepts. The object of step four is to come to an overall understanding of the collected data, identifying central themes, and separating nonessential information from essential information (Tolley et al. 2016). This was accomplished by observing common themes and trends in the case studies related to preparedness and in the survey responses.

Step five was interpretation, which focuses on deriving meaning from qualitative data, validating the trustworthiness of the interpretation, and interpreting data (Tolley et al. 2016). This step was emphasized by Lawton and Rudd (2014). They described how qualitative research narratives, based on solid empirical evidence, can tell a compelling story that drives positive changes in policy (Lawton & Rudd, 2014, p. 853). In public policy research, the researcher must always strive to generate research findings that not only further the academic study of policy, but also provide credible information upon which to base policy changes or new policies.

Trustworthiness

Trustworthiness is important to any qualitative study to show the reader that the researcher's work has been thorough and complete. According to Creswell (2013), researchers must not only learn the behaviors of study participants, but they must also convey this learning to others. Research is trustworthy when it can be understood that research strategies and findings are grounded and sound. The four components of trustworthiness, detailed below, are credibility, dependability, confirmability, and transferability.

Credibility

Credibility is the degree to which a researcher seems to understand or have knowledge of a research subject. This can be addressed in many ways. Lincoln and Guba (1985) recommended several techniques to address credibility, the most applicable of which are triangulation, peer debriefing, negative case analysis, and referential adequacy. To achieve triangulation, multiple sources of data were used, including three case studies and 11 surveys, which could be compared and contrasted. Surveys originated from three sources and case study documents originated with multiple sources.

Dependability and Confirmability

Dependability and confirmability in a qualitative study are similar to data reliability in a quantitative study. For this category, detailed descriptions were developed for each case study to ensure all data collected was carefully sourced to provide verifiable evidence of the research. This allows others to continue this line of inquiry and determine if the collected data is correct and taken in context. The audit trail also ensured the collected data was accurate and that the study could be replicated or confirmed in the future.

Transferability

Transferability is the key to successful case study research. The study's findings and conclusions must be able to be transferred to a broader population or set of circumstances. This can be accomplished both through detailed and thorough case study descriptions and increases in the variation of the sample of participants. For the surveys used in this study, the demographics and sample size of each were examined to extrapolate the applicability of the data to the whole U.S. population. For the case studies and for the integration of case study and survey data, the VIT was used, which can increase the transferability of the study's results through the use of this theory in other related studies.

Ethical Considerations

Ethics are an important and inextricable part of scholarly research. The only human research required for this study was an online survey, which had 237 respondents. All survey responses were anonymous, with no personally identifying information collected. Approval was sought for the study from the Liberty University IRB. None of the selected surveys used in this study contained personally identifiable information about the survey participants. The case study documents contained many names of individuals involved in disaster response. To protect

anonymity, all names were excluded except those of document authors and public officials. Also, the detailed audit trail provided transparency in the sources used and the data collected, which not only ensured trustworthiness but also eliminated the personal biases of the researcher from impacting on the results of the study.

Summary

This chapter described the methods used for this research study investigating individual and family disaster preparedness in America. The research design and rationale for the chosen method, design, and approach were described. The researcher's role was examined, and a review of the components of the study, including policy evaluation, case studies, and survey research was carried out. The nature and details of the selected surveys were provided, which is a national, representative sample. The details of the selected case studies—Colorado, Florida, and Washington—were provided. Finally, the steps for data analysis, the methods for establishing trustworthiness, and ethical considerations were discussed.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this qualitative study case study is to understand how the failures of current preparedness policy contribute to the lack of individual and family preparedness and the political, social, and psychological factors that drive individuals and families to prepare—or not—for disasters. This study uses a combination of policy evaluation, survey research, and case studies to determine the factors that drive individual and family preparedness. Chapter 4 describes the results of the data analysis for this study presented in Chapter 3. This chapter is divided into three main sections: survey findings, policy findings, and case study findings. This organization provides a better understanding of some of the various components of individual and family preparedness. Following the presentation of findings, this chapter goes on to describe the themes that emerged during study and provides detailed answers to each of the research questions.

Survey/Questionnaire Findings

The survey developed for this study was active on surveyplanet.com from August 10, 2022, until October 31, 2022. During that time, 237 respondents completed the survey. The survey questions, along with the answer options, are listed in Appendix A. Charts showing the survey response totals are listed in Appendix B.

The results of this survey have been analyzed and the survey responses categorized into four broad categories or themes. This categorization not only aids analysis but also provides interesting insight into American preparedness behaviors. The first category is preparedness beliefs, which includes the following topics: perceptions of risk, perceived barriers to preparedness, and perceptions that preparedness helps in the event of a disaster (i.e.,

preparedness efficacy). The second category is preparedness knowledge, which includes the following topics: knowledge of local preparedness plans and systems, knowledge of individual preparedness (i.e., receipt of preparedness information), and knowledge or experience of past disasters. The third category is preparedness behaviors, which includes the following topics: having a family emergency or preparedness plan, talking with others about preparedness, and the five stages of preparedness, as defined by FEMA. The fourth category is preparedness actions, which includes the following topics: gathering supplies for emergency situations, participation in preparedness training or drills, and purchasing disaster-specific insurance. The following sections show the in-depth analysis of the survey responses within each of these categories, including raw data from the survey.

Preparedness Beliefs

Table 4 below depicts the survey question and responses related to beliefs about the potential risk of a disaster event. The majority (89.8%) of survey respondents believe there is a risk of a disaster occurring in or near their home.

Table 4

Survey Responses, Preparedness Beliefs, Potential Risk

Survey Year	Question Number	Question	Answer Options	Answer %
2022	1	I believe that there is a risk of a major disaster event occurring in or near my home. A major disaster could include an earthquake, tornado, hurricane, wildfire, flood, severe storm, or other related event.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	52.7% 37.1% 7.2% 3.0% 0.0%

Table 5 below depicts the survey question and responses related to beliefs about barriers to preparedness. Only 56.4% of survey respondents have set aside financial resources to have on hand in the event of a disaster.

Table 5*Survey Responses, Preparedness Beliefs, Barriers to Preparedness*

Survey Year	Question Number	Question	Answer Options	Answer %
2022	3	I have set aside financial resources (i.e., money) to have on hand for a major disaster event.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	23.3% 33.1% 16.5% 21.2% 5.9%

Table 6 below depicts the survey question and responses related to beliefs that preparedness helps, which is also referred to as preparedness efficacy. The majority of survey respondents, 94.5%, believe preparing for a disaster will help them survive the effects of a disaster in or near their home.

Table 6*Survey Responses, Preparedness Beliefs, Believe Preparedness Helps (Efficacy)*

Survey Year	Question Number	Question	Answer Options	Answer %
2022	2	I believe that preparing for a major disaster event will help me and my family survive the disaster's effects. Preparing could include making a plan, practicing our plan, gathering supplies, or other related preparedness activities.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	61.0% 33.5% 5.1% 0.4% 0.0%

Preparedness Knowledge

Table 7 below depicts the survey question and responses related to respondents who have received preparedness information. Sixty-seven point five percent of survey respondents indicate that they have received or sought information related to disasters or preparedness.

Table 7

Survey Responses, Preparedness Knowledge, Have Received Preparedness Information

Survey Year	Question Number	Question	Answer Options	Answer %
2022	4	I have received or sought out information related to disasters and/or preparedness in my area. This could include internet research, calling local authorities, or printed materials such as brochures or pamphlets.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	32.6% 33.1% 11.9% 16.5% 5.9%

Table 8 below depicts the survey questions and responses related to respondents who have experience with disasters. For this survey, 58.5% of respondents report that they have personal or family experience with major disaster events.

Table 8

Survey Responses, Preparedness Knowledge, Experience with Disasters

Survey Year	Question Number	Question	Answer Options	Answer %
2022	5	I have personal or family experience with major disaster events. This could include personally experiencing a major disaster event or having a family member or loved one personally experience a major disaster event.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	37.3% 21.2% 10.6% 22.9% 8.1%

Preparedness Behaviors

Table 9 below depicts the survey questions and responses related to respondents who have made a household emergency plan. Overall responses for this survey show that 61.9% of respondents have made an emergency plan for themselves or their families that addresses what to do during a major disaster event.

Table 9*Survey Responses, Preparedness Behaviors, Household Emergency Plan*

Survey Year	Question Number	Question	Answer Options	Answer %
2022	6	I have made an emergency plan for myself and/or my family that addresses what to do during a major disaster event. This plan could be written, typed, or verbal.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	30.1% 31.8% 10.6% 23.3% 4.2%

Table 10 below depicts the survey question and responses related to respondents who report talking about preparedness with others. In this survey, 71.6% of respondents report having spoken with other people about the need to prepare or how to prepare for a major disaster event.

Table 10*Survey Responses, Preparedness Behaviors, Talking About Preparedness with Others*

Survey Year	Question Number	Question	Answer Options	Answer %
2022	7	I have spoken with other people about getting prepared for a major disaster event. These conversations could be either general or specific in nature, but are related in some way to disaster preparedness.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	34.3% 37.3% 9.7% 14.0% 4.7%

Table 11 below depicts the survey question and responses related to the stages of preparedness behavior. The stages of preparedness behavior identified by FEMA are as follows:

- Stage 1: Precontemplation – I have NOT prepared, and I DO NOT intend to prepare in the next year.
- Stage 2: Contemplation – I have NOT prepared, but I intend to prepare in the next year.
- Stage 3: Preparation – I have NOT prepared, but I intend to prepare in the next six months.

- Stage 4: Action – I have been prepared for the last year.
- Stage 5: Maintenance – I have been preparing for MORE than a year.

The survey reports 9.8% of respondents in Stage 1/Precontemplation, 18.3% in Stage 2/Contemplation, 12.8% in Stage 3/Preparation, 20.4% in Stage 4/Action, and 38.7% in Stage 5/Maintenance.

Table 11

Survey Responses, Preparedness Behaviors, Stages of Preparedness Behavior

Survey Year	Question Number	Question	Answer Options	Answer %
2022	8	Based on your assessment of your disaster preparedness beliefs, knowledge, and behaviors, which stage of preparedness would best fit you and/or your family?	Stage 1: Precontemplation: I have NOT prepared, and I DO NOT intend to prepare in the next year	9.8%
			Stage 2: Contemplation: I have NOT prepared, but I intend to prepare in the next year	18.3%
			Stage 3: Preparation: I have NOT prepared, but I intend to prepare in the next six months	12.8%
			Stage 4: Action: I have been prepared for the last year	20.4%
			Stage 5: Maintenance: I have been preparing for MORE than a year	38.7%

Preparedness Actions

Table 12 below depicts the survey question and responses related to respondents who report having gathered emergency supplies. Seventy-five percent of survey respondents have gathered supplies, such as food, water, and medical supplies, to last three or more days in the event of a major disaster.

Table 12

Survey Responses, Preparedness Actions, Have Gathered Emergency Supplies

Survey Year	Question Number	Question	Answer Options	Answer %
2022	9	I have gathered supplies, such as food, water, and medical supplies, to last three or more days in the event of a major disaster.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	47.0% 28.0% 6.8% 14.0% 4.2%

Table 13 below depicts the survey question and responses related to respondents who report having participated in preparedness training and/or drills. Overall, only 35.2% of survey respondents have attended a local preparedness meeting or training event, or participated in a local emergency drill.

Table 13

Survey Responses, Preparedness Actions, Have Participated in Preparedness Training and/or Drills

Survey Year	Question Number	Question	Answer Options	Answer %
2022	10	I have attended a local preparedness meeting or training event, or participated in a local emergency drill.	Strongly Agree Agree Neither Agree nor Disagree Disagree Strongly Disagree	19.1% 16.1% 13.1% 30.1% 21.6%

CPR = cardiopulmonary resuscitation

Table 14 below depicts the survey question and responses related to respondents who report having purchased hazard insurance. For this survey, 56.8% of respondents report that they have purchased homeowner's or renter's insurance and have purchased hazard-specific insurance such as flood insurance or earthquake insurance.

Table 14*Survey Responses, Preparedness Actions, Have Purchased Hazard Insurance*

Survey Year	Question Number	Question	Answer Options	Answer %
2022	11	I have purchased homeowner's or renter's insurance and have purchased hazard-specific insurance such as flood insurance or earthquake insurance.	Strongly Agree	28.4%
			Agree	28.4%
			Neither Agree nor Disagree	17.4%
			Disagree	14.4%
			Strongly Disagree	11.4%

Secondary Survey Findings

This study analyzes 10 different surveys spanning the period of 2010 to 2020. These surveys originate from three sources: FEMA, the NCDP at Columbia University, and the CDC. These surveys are all open source and can be used in research by anyone. All but one of the surveys provides a national, representative sample for the US. The survey that does not provide a national representative sample covers a sample of 14 states, making it largely representative. All surveys are conducted over the phone using a random number dialer and all ask questions related to disaster preparedness attitudes and behaviors. As with the survey developed for this study, the results of these 10 surveys have been analyzed and the survey responses categorized into four broad categories or themes: preparedness beliefs, preparedness knowledge, preparedness behaviors, and preparedness actions. The following sections show the in-depth analysis of each of these categories and the topics within them, including raw data from each of the 10 surveys.

Preparedness Beliefs

Table 15 below depicts the survey questions and responses related to beliefs about the potential risk of a disaster event. This category includes questions from eight of the 10 surveys, for a total of 16 questions. According to the 2011 survey, 72% of respondents are concerned or very concerned about the possibility of more terror attacks, 34% of respondents believe the

country is not safer now (in 2011) than on 9/11, and 31% are concerned a great deal or a good amount about a terror attack while traveling by air. In the 2013 survey, 46% of respondents believe a natural disaster would occur in their community. The 2014 survey depicts perceived risks, with 42–46% of respondents believing natural disasters were a risk to their communities and 9–15% of respondents believing terror attacks were a risk to their communities. According to the 2016 survey, 83% of respondents are concerned or very concerned that there would be more terror attacks in the United States and 65% of respondents are concerned or very concerned that a terror attack in their community would affect child-serving institutions in their community. The 2017 survey indicates that the demographics with the highest level of hazard awareness were 65+ years old (48%), white (44%), women (42%), with an income between \$4,000 and \$10,000 (47%). The 2018, 2019, and 2020 surveys have the same response rate for this category with 98% of respondents to all three surveys indicating that risk perception of disasters is a key hazard or disaster preparedness influencer.

Table 15

Secondary Survey Responses, Preparedness Beliefs, Potential Risk

Survey Year	Question Number	Question	Answer Options	Answer %
2011	3	Are you very concerned, concerned, not very concerned, or not concerned at all about the possibility there will be more terror attacks in the United States?	Very concerned Concerned Not very concerned Not concerned at all	23% 49% 19% 9%
2011	6	Do you think the country is safer now than it was on September 11, 2001?	Yes No Unsure	63% 34% 3%
2011	10	When considering air travel, are you concerned a great deal, a good amount, not very much, or not at all about a terrorist bomb or attack?	A great deal A good amount Not very much Not at all	13% 18% 40% 28%
2013	6	Perceptions of risk of a natural disaster	Believe a natural disaster will ever occur in their community	46%
2014	8	Perceived risk	Natural disaster Hazardous materials incident Disease outbreak	46% 23% 19%

				Terrorist attack	15%
2014	10	Belief by disaster groups	Natural disaster	Risk to my community Severity of impacts Preparing helps I can respond	42% 58% 68% 51%
			Terrorist attack, Hazardous materials accident, Disease outbreak	Risk to my community Severity of impacts Preparing helps I can respond	9% 21% 26% 19%
2016	6	Are you very concerned, concerned, not very concerned, or not concerned at all about the possibility that there will be more terror attacks in the United States?		Very concerned OR concerned	83%
2016	23	Are you very concerned, concerned, not very concerned, or not concerned at all about the possibility that there will be more terror attacks in the United States?		Very concerned Concerned Not very concerned Not concerned at All Unsure/ Refused	50% 33% 9% 7% 1%
2016	33	Concern over terrorism against child-serving institutions in your community?		Concerned/ Very concerned Not very/ Not at all concerned Unsure	65% 34% 1%
2017	6	How does hazard awareness, specifically, differ by demographics?			
		Age	18–29 34%	30–44 35% 43%	45–64 65+ 48%
		Race	White 44%	Black 35% 30%	Hispanic
		Gender	Men 39%	Women 42%	
		Income	Under \$2,000 26%	\$2,000–3,999 41% 47%	\$4,000–7,499 \$7,500–10,000 47% \$10,000+ 42%
2018	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Risk perception	98%
2018	7	Disaster preparedness influencers		Risk perception of any disasters	98%
2019	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Risk perception	98%
2019	7	Disaster preparedness influencers		Risk perception of any disasters	98%
2020	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Risk perception	98%
2020	7	Disaster preparedness influencers		Risk perception of any disasters	98%

Table 16 below depicts the survey questions and responses related to beliefs about barriers to preparedness. This category includes questions from four of the 10 surveys for a total of four questions. According to the 2014 survey, 26% of respondents believe preparing is too expensive and 24% of respondents do not know how to get prepared. In the 2018 survey, 67% of respondents have at least some money set aside for an emergency, 53% have no more than \$500 set aside, and 53% have either \$0 set aside or do not know what they have set aside. The 2019 survey indicates that 69% of respondents have at least some money set aside for an emergency, 46% have no more than \$700 set aside, and 46% have either \$0 set aside or do not know what they have set aside. In the 2020 survey, 68% of respondents have at least some money set aside for an emergency and 46% have either \$0 set aside or do not know what they have set aside.

Table 16

Secondary Survey Responses, Preparedness Beliefs, Barriers to Preparedness

Survey Year	Question Number	Question		Answer Options	Answer %
2014	7	Perceived barriers to preparedness		Believe preparing is too expensive	26%
				Don't know how to get prepared	24%
				Don't think they have time to prepare	18%
				Believe getting information is too hard	17%
2018	4	Are people prepared financially for an emergency?	Percentage of adults having a specific dollar amount or range saved for an emergency:	\$0	33%
				>\$0 but Unknown	20%
				\$1 to \$999	8%
				\$1,000 to \$2,999	13%
				\$3,000 to \$5,000	9%
				>\$5,000	17%
			Setting aside money for an emergency	Some money set aside	67%
				No more than \$500 set aside	53%
2019	4	Are people prepared financially for an emergency?	Percentage of adults having a specific dollar amount or range saved for an emergency	\$0	31%
				>\$0 but Unknown	15%
				\$1 to \$999	10%
				\$1,000 to \$2,999	14%
				\$3,000 to \$5,000	10%
				>\$5,000	20%
			Setting aside money for an emergency	Some money set aside	69%

			No more than \$700 set aside	46%
2020	4	Financial resilience indicators	\$0 >\$0 but Unknown \$1 to \$999 \$1,000 to \$2,999 \$3,000 to \$5,000 >\$5,000	32% 14% 9% 13% 11% 21%
		Setting aside money for an emergency	Some money set aside	68%

Table 17 below depicts the survey questions and responses related to beliefs that preparedness helps, which is also referred to as preparedness efficacy. This category includes questions from five of the 10 surveys for a total of 11 questions. The 2014 survey lists seven different disaster categories along with the percentage of respondents who believe preparedness helps for that disaster category. For weather emergencies, 74% believe preparedness helps; for natural disasters, 67% believe preparedness helps; for floods, 51% believe preparedness helps; for wildfires, 59% believe preparedness helps; for disease outbreaks, 56% believe preparedness helps; for hazardous materials accidents, 51% believe preparedness helps; and for terrorist attacks, 47% believe preparedness helps. In the 2017 survey, 42% of respondents report they believe preparedness helps in the event of a disaster. Preparedness efficacy also differs depending on the major disaster threats people face. In hurricane-prone regions, 55% believe preparedness helps, while in winter storm-prone regions only 40% believe preparedness helps. The 2017 survey also shows a correlation between preparedness efficacy and preparedness behaviors. Of those who believe preparedness helps, 51% report they are prepared, 58% have a household plan, and 82% have gathered emergency supplies. In the 2018 survey, 47% of respondents believe preparedness helps. The 2019 survey reports that 42% of respondents believe preparedness helps. Finally, in the 2020 survey, 47% of respondents believe preparedness helps.

Table 17*Secondary Survey Responses, Preparedness Beliefs, Believe Preparedness Helps (Efficacy)*

Survey Year	Question Number	Question		Answer Options	Answer %
2014	9	Perceived efficacy: preparing helps and I can respond	Weather emergency	% of individuals who believe preparing helps	74%
			Natural disaster	% of individuals who believe they can respond	67%
				% of individuals who believe preparing helps	68%
				% of individuals who believe they can respond	51%
			Flood	% of individuals who believe preparing helps	66%
				% of individuals who believe they can respond	52%
				% of individuals who believe preparing helps	59%
			Wildfire	% of individuals who believe they can respond	44%
				% of individuals who believe preparing helps	56%
				% of individuals who believe they can respond	35%
			Disease outbreak	% of individuals who believe they can respond	51%
				% of individuals who believe preparing helps	25%
				% of individuals who believe they can respond	47%
			Hazardous materials accident	% of individuals who believe preparing helps	22%
			Terrorist attack		
2017	2	Three mechanisms that can influence preparedness are awareness of information, preparedness efficacy, and experience with disasters. Less than one half of respondents reported that these influencers apply to them		Preparedness efficacy: % of respondents reported they both believe that preparing can help in a disaster and are confident in their abilities to prepare	42%

2017	4	How do actions, preparedness influencers, and perceived preparedness differ by hazard area?	High efficacy	Hurricane	Winter Storm
				55%	40%
2017	8	What is the relationship between preparedness influencers and perceived preparedness?	High efficacy	No intent to prepare Intend to prepare Prepared	8% 40% 51%
2017	9	What is the relationship between actions and preparedness influencers?	High efficacy	Have a household plan No household plan	58% 42%
			High efficacy	Gathered supplies Have not gathered supplies	82% 18%
2018	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Preparedness efficacy	47%
2018	7	Disaster preparedness influencers		Preparedness efficacy for disasters	47%
2019	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Preparedness efficacy	42%
2019	7	Disaster preparedness influencers		Preparedness efficacy for disasters	42%
2020	2	Key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Preparedness efficacy	47%
2020	7	Disaster preparedness influencers		Preparedness efficacy for disasters	47%

Preparedness Knowledge

Table 18 below depicts the survey questions and responses related to knowledge of local emergency plans and systems. This category includes questions from seven of the 10 surveys for a total of 17 questions. In the 2011 survey, 44% of survey respondents think that their local community's emergency response plan is adequate and 64% of respondents are either familiar or very familiar with their child's school's emergency or evacuation plans. The 2013 survey reports 55% of respondents are familiar with their community's alert and warning system. The same percentage appears in the 2014 survey. The 2016 survey indicates that 35% of respondents report their community's current emergency response plan is adequate and their community is prepared

in the event of a disaster. Also in the 2016 survey, 67% report they are aware of their child's school's evacuation plan and 57% report they are aware of where their child will be evacuated to if the school had to evacuate, which is further reported by region of residence: 47% of those in a big city are aware, 49% of those in a small city are aware, 63% of those in rural or suburban areas are aware, and 65% of those in a small town are aware. The 2017 survey depicts knowledge of local plans and systems by hazard area: 61% of respondents in hurricane areas are aware, 38% of respondents in winter storm areas are aware, 35% of respondents in extreme heat areas are aware, and 41% of respondents in tornado areas are aware. Awareness of local plans and systems also correlates with preparedness behaviors in the 2017 survey, with 56% of aware respondents reporting they are prepared, 62% of aware respondents have a household emergency plan, and 87% of aware respondents have gathered emergency supplies. The 2018, 2019, and 2020 surveys report that awareness of information on local plans and systems is a key influencer of preparedness behavior, with 43%, 43%, and 47% of respondents, respectively, reporting they are both aware of local plans and systems and are prepared for a disaster event.

Table 18

Secondary Survey Responses, Preparedness Knowledge, Knowledge of Local Plans and Systems

Survey Year	Question Number	Question	Answer Options	Answer %
2011	1	In the event of a major disaster where there was NO WARNING such as a terrorist attack or earthquake, do you think your community has an adequate emergency response plan currently in place, or not?	Yes, is adequate No, is not adequate Unsure	44% 47% 9%
2011	9	Among parents of school-aged children: Thinking about your <oldest/youngest> child in daycare or school, are you very familiar, familiar, not very familiar, or not familiar at all with the emergency or evacuation plan at your child's school?	Very familiar Familiar Not very familiar Not familiar at all	25% 39% 18% 18%
2013	1	Familiarity with community plans and systems	Alert and warning systems What local hazards are	55% 46%
2014	1	Be informed	Familiar with local hazards	46%

					Familiar with alert and warning systems		55%
2016	3	In the event of a major disaster where there was no warning such as a terrorist attack or earthquake, do you think your community has an adequate emergency response plan currently in place or not?			Yes, is adequate No, is not adequate Unsure		35% 41% 24%
2016	10	How familiar are you with the emergency or evacuation plan at your child or children's daycare or school?			Not very familiar OR Not familiar at all		35%
2016	11	Do you know where your child or children would be evacuated to if their school had to evacuate?			Yes No Unsure		57% 41% 2%
2016	14	Is your community adequately prepared with an emergency response plan in the event of a major disaster?			Yes No Unsure/DK Refused/NA		35% 41% 24% <1%
2016	28	How long before child-serving institutions reunite children with parents after major disaster?			Under one hour Within several hours Within a day Within several days More than several days Unsure/NA		16% 54% 18% 7% 2% 3%
2016	29	Do you know where your child or children would be evacuated to if their school had to evacuate?			Yes No Unsure		57% 41% 2%
2016	30	Do you know where your child or children would be evacuated to if their school had to evacuate?	% of participants who answered "Yes"		Big city Small city Rural area Suburban Small town		47% 49% 63% 63% 65%
2016	31	How familiar are you with the emergency or evacuation plan at your child or children's daycare or school?			Familiar/ Very familiar Not very/ Not at all familiar Unsure/NA		65% 35% 1%
2017	4	How do actions, preparedness influencers, and perceived preparedness differ by hazard area?	Awareness	Hurricane	Winter storm	Extreme Heat	Tornado
				61%	38%	35%	41%
2017	8	What is the relationship between preparedness influencers and perceived preparedness?	Awareness		No intent to prepare Intend to prepare Prepared		7% 35% 56%
2017	9	What is the relationship between actions and	Awareness		Have a household plan No household plan		62% 37%
			Awareness		Gathered supplies		87%

		preparedness influencers?		Have not gathered supplies	18%
2018	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Awareness of information	43%
2019	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Awareness of information	43%
2020	2	Key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)		Awareness of information	47%

Table 19 below depicts the survey questions and responses related to respondents who have received preparedness information. This category includes questions from five of the 10 surveys for a total of 18 questions. In the 2013 survey, 63% of respondents recall receiving preparedness information and 55% of those who received preparedness information are taking steps to prepare after receiving the information. The 2017 survey indicates in one question that 40% of respondents have read, seen, or heard information about how to get better prepared for a disaster. This survey reports the rate of people seeking preparedness information by hazard region, with 54% seeking information in hurricane regions, 29% seeking information in winter storm regions, and 39% seeking information in extreme heat regions. Of those who sought information, 56% also indicate they are prepared for a disaster event. For the 2018 survey, 51% of respondents have sought information on preparedness. By hazard area, 50% in tornado areas sought information, 48% in flood areas sought information, 66% in hurricane areas sought information, 57% in wildfire areas sought information, 51% in earthquake areas sought information, 50% in urban event areas sought information, and overall nationwide 51% report seeking information on preparedness. Among the 2018 survey respondents, 43% report that they are aware of information on disasters and preparedness. For the 2019 survey, 64% of respondents have sought information on preparedness. By hazard area, 66% in tornado areas sought information, 62% in flood areas sought information, 80% in hurricane areas sought information,

67% in wildfire areas sought information, 66% in earthquake areas sought information, 58% in urban event areas sought information, and overall nationwide 64% report seeking information on preparedness. Also, 43% of 2019 survey respondents report they are aware of information on disasters and preparedness. For the 2020 survey, 65% of respondents have sought information on preparedness. By hazard area, 69% in tornado areas sought information, 63% in flood areas sought information, 76% in hurricane areas sought information, 74% in wildfire areas sought information, 66% in earthquake areas sought information, 62% in urban event areas sought information, and, overall, nationwide 65% report seeking information on preparedness. Also, 47% of the 2020 survey respondents report they are aware of information on disasters and preparedness.

Table 19

Secondary Survey Responses, Preparedness Knowledge, Have Received Preparedness Information

Survey Year	Question Number	Question		Answer Options	Answer %
2013	7	Percentage of respondents who recalled receiving preparedness information		Yes, “information aware” No, “not information aware”	63% 37%
2013	8	Percent of information aware respondents who took steps after receiving preparedness information in the past year		Yes No Didn’t need to take any steps; already prepared	55% 38% 7%
2017	1	Taking action	Seeking information	92% of respondents reported taking at least one of these preparedness actions. 46% took three or more actions.	
2017	2	Three mechanisms that can influence preparedness are: awareness of information, preparedness efficacy, and experience with disasters. Less than one half of respondents reported that these influencers apply to them		Awareness of information: % of respondents reported they have read, seen, or heard information about how to get better prepared for a disaster	40%
2017	4	How do actions, preparedness influencers, and perceived preparedness differ by hazard area?	Sought information	Hurricane	Extreme Heat
				54%	29% 39%

2017	7	What is the relationship between actions and perceived preparedness?	Sought information	No intent to prepare Intend to prepare Prepared	5% 39% 56%
2018	3	To what extent are people taking action to prepare for a hazard?		Seek information on preparedness	51%
2018	5	How does taking selected preparation actions differ by hazard area?		Has sought information	
				Tornado areas	50%
				Flood areas	48%
				Hurricane areas	66%
				Wildfire areas	57%
				Earthquake areas	51%
				Urban Event areas	50%
				Nationwide	51%
2018	6	Taking action to prepare for a disaster		Seek information on preparedness	51%
2018	7	Disaster preparedness influencers		Awareness of information on disasters	43%
2019	3	To what extent are people taking action to prepare for a hazard?		Seek information on preparedness	64%
2019	5	How does taking selected preparation actions differ by hazard area?		Has sought information	
				Tornado areas	66%
				Flood areas	62%
				Hurricane areas	80%
				Wildfire areas	67%
				Earthquake areas	66%
				Urban event areas	58%
				Nationwide	64%
2019	6	Taking action to prepare for a disaster		Seek information on preparedness	64%
2019	7	Disaster preparedness influencers		Awareness of information on disasters	43%
2020	3	Six basic preparedness actions lay the groundwork for pursuing other actions		Seek information on preparedness	65%
2020	5	Preparedness actions by hazard area		Has sought information	
				Tornado areas	69%
				Flood areas	63%
				Hurricane areas	76%
				Wildfire areas	74%
				Earthquake areas	66%
				Urban event areas	62%
				Nationwide	65%
2020	6	Taking action to prepare for a disaster		Seek information on preparedness	65%
2020	7	Disaster preparedness influencers		Awareness of information on disasters	47%

Table 20 below depicts the survey questions and responses related to respondents who have experience with disasters. This category includes questions from five of the 10 surveys for a total of 12 questions. The 2016 survey asks respondents if they have experienced a disaster in the

past five years; the ‘Yes’ responses are categorized by region, with 28% in the northeast, 17% in the south, 14% in the west, and 8% in the Midwest. Fifty percent of respondents indicate that disasters like Hurricane Katrina and Superstorm Sandy changed their views on disaster preparedness. The survey shows ‘Yes’ responses categorized by region, with 60% in the northeast, 51% in the south, 48% in the west, and 43% in the Midwest. In the 2017 survey, 43% of respondents have either personal or familial experience with disasters. Disaster experience is also correlated with key preparedness behaviors and 57% of those with disaster experience indicate they are prepared for a disaster, 55% have a household emergency plan, and 85% have gathered emergency supplies. The 2018, 2019, and 2020 surveys also correlate disaster experience with disaster preparedness, showing 44%, 44%, and 47% of respondents, respectively, who indicate that disaster experience is a reason for their preparedness efforts.

Table 20

Secondary Survey Responses, Preparedness Knowledge, Experience with Disasters

Survey Year	Question Number	Question		Answer Options	Answer %
2016	13	Have you experienced a major disaster in the past five years?	% reporting "Yes" by region	Northeast South West Midwest	28% 17% 14% 8%
2016	19	Have major natural disasters such as Hurricane Katrina or Superstorm Sandy changed how you view your household's preparedness for disasters?		Yes No Unsure/Don't know	50% 49% 1%
2016	20	Have major natural disasters such as Hurricane Katrina or Superstorm Sandy changed how you view your household's preparedness for disasters?	% reporting "Yes" by region	Northeast South West Midwest	60% 51% 48% 43%
2017	2	Three mechanisms that can influence preparedness are: awareness of information, preparedness efficacy, and experience with disasters. Less than one half of respondents reported that these influencers apply to them		Experience with disasters: % of respondents reported personal or familial experience with a disaster	43%

2017	8	What is the relationship between preparedness influencers and perceived preparedness?	Experience	No intent to prepare Intend to prepare Prepared	10% 31% 57%
2017	9	What is the relationship between actions and preparedness influencers?	Experience	Have a household plan No household plan	55% 45%
			Experience	Gathered supplies Have not gathered supplies	85% 15%
2018	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)	Experience with disasters		44%
2018	7	Disaster preparedness influencers	Disaster experience		44%
2019	2	What are the key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)	Experience with disasters		44%
2019	7	Disaster preparedness influencers	Disaster experience		44%
2020	2	Key influencers to hazard preparedness? (Four influencers of a person's decision to begin preparing for a future hazard)	Experience with disasters		47%
2020	7	Disaster preparedness influencers	Disaster experience		47%

Preparedness Behaviors

Table 21 below depicts the survey questions and responses related to respondents who have made a household emergency plan. This category includes questions from 10 of the 10 surveys for a total of 20 questions. The 2010 survey shows that 43% of respondents report having a minimal family emergency plan. In the 2011 survey, 49% of respondents indicate that they have a family emergency preparedness plan that all family members know about, with 35% of respondents reporting that their plan includes emergency supplies and evacuation information. Then, the 2012 survey shows that only 21.1% of respondents have a written evacuation plan, one component of a household emergency plan. In the 2013 survey, 43% of respondents report having a household emergency plan and 39% of respondents both have a plan and have discussed that plan with their family. Similarly, the 2014 survey indicates that 39% of respondents both have a plan and have discussed that plan with their family. For the 2016 survey,

50% of respondents report having a household emergency plan that all family members know about. The 2017 survey shows household emergency plans by hazard region, with 58% of those in hurricane regions reporting having a plan and 40% of those in winter storm regions reporting having a plan. Of those reporting they have a household emergency plan, 65% also indicate they are prepared for disaster. The overall response for the 2018 survey is that 49% of respondents have an emergency plan. By disaster region, the rate of respondents with household emergency plans is 53% for tornado areas, 47% for flood areas, 63% for hurricane areas, 55% for wildfire areas, 43% for earthquake areas, and 42% for urban event areas. The overall response for the 2019 survey is that 48% of respondents have an emergency plan. By disaster region, the rate of respondents with household emergency plans is 56% for tornado areas, 43% for flood areas, 61% for hurricane areas, 50% for wildfire areas, 46% for earthquake areas, and 35% for urban event areas. The overall response for the 2020 survey is that 48% of respondents have an emergency plan. By disaster region, the rate of respondents with household emergency plans is 61% for tornado areas, 39% for flood areas, 67% for hurricane areas, 52% for wildfire areas, 53% for earthquake areas, and 39% for urban event areas.

Table 21

Secondary Survey Responses, Preparedness Behaviors, Household Emergency Plan

Survey Year	Question Number	Question	Answer Options	Answer %
2010	1	Despite considerable investment of federal funds directed at increasing preparedness since the 2001 terrorist attacks, overall population preparedness has barely increased. In U.S. survey data collected by Columbia's National Center for Disaster Preparedness between 2003 and 2008, the proportion of citizens who reported having a minimal family emergency plan has only increased from 37% to 43%		
2011	7	Do you have a family emergency preparedness plan that all family members know about?	Yes No Unsure	49% 51% 1%
2011	8	Does your family emergency preparedness plan include all, some, or none of the following: at least two days of food and water, a flashlight, a portable radio and spare batteries, emergency	All Some None	35% 13% 1% 51%

		phone numbers, and a meeting place for family members in case of evacuation?	Does not have emergency preparedness plan	
2012	1	Percentage of participants reporting household disaster or emergency preparedness, by preparedness measures and sociodemographic Characteristics	Have a written evacuation plan	21.10%
2013	4	Self-reported household plans	Have plan Have plan and have discussed plan with household	43% 39%
2014	2	Household emergency plans	Have plan and have discussed plan with household	39%
2016	1	Does your family have a family emergency preparedness plan?	Yes	50%
2016	12	Do you have a family emergency preparedness plan that all family members know about?	Yes No Unsure/NA	50% 49% 1%
2017	1	Taking action	Developing a household plan	92% of respondents reported taking at least one of these preparedness actions. 46% took three or more actions.
2017	4	How do actions, preparedness influencers, and perceived preparedness differ by hazard area?	Have a household plan	Hurricane 58% Winter storm 40%
2017	7	What is the relationship between actions and perceived preparedness?	Has a household plan	No intent to prepare Intend to prepare Prepared 4% 30% 65%
2018	3	To what extent are people taking action to prepare for a hazard?	Make an emergency plan	49%
2018	5	How does taking selected preparation actions differ by hazard area?	Has made an emergency plan Tornado areas Flood areas Hurricane areas Wildfire areas Earthquake areas Urban event areas Nationwide	53% 47% 63% 55% 43% 42% 49%
2018	6	Taking action to prepare for a disaster	Make an emergency plan	49%
2019	3	To what extent are people taking action to prepare for a hazard?	Make an emergency plan	48%
2019	5	How does taking selected preparation actions differ by hazard area?	Has made an emergency plan Tornado areas Flood areas Hurricane areas Wildfire areas Earthquake areas Urban event areas Nationwide	56% 43% 61% 50% 46% 35% 48%

2019	6	Taking action to prepare for a disaster	Make an emergency plan	48%
2020	3	Six basic preparedness actions lay the groundwork for pursuing other actions	Make an emergency plan	48%
2020	5	Preparedness actions by hazard area	Has made an emergency plan	
			Tornado areas	61%
			Flood areas	39%
			Hurricane areas	67%
			Wildfire areas	52%
			Earthquake areas	53%
			Urban event areas	39%
			Nationwide	48%
2020	6	Taking action to prepare for a disaster	Make an emergency plan	48%

Table 22 below depicts the survey questions and responses related to respondents who report talking about preparedness with others. This category includes questions from five of the 10 surveys for a total of 13 questions. The 2013 survey reports 31% of respondents have talked with others about preparedness. The 2017 survey reports those who have talked with others about preparedness by hazard region, with rates of 43% in hurricane areas, 24% in winter storm areas, 29% in earthquake areas, and 26% in extreme heat areas. Of those who report they have talked with others about preparedness, the 2017 survey reports that 65% of respondents say they are also prepared for a disaster. Thirty-eight percent of respondents in the 2018 survey report they have talked with others about preparedness. By hazard region, the rate of respondents who have talked with others about preparedness is 40% for tornado areas, 37% for flood areas, 50% for hurricane areas, 51% for wildfire areas, 41% for earthquake areas, and 35% for urban event areas. Forty-five percent of respondents in the 2019 survey report they have talked with others about preparedness. By hazard region, the rate of respondents who have talked with others about preparedness was 54% for tornado areas, 44% for flood areas, 63% for hurricane areas, 47% for wildfire areas, 54% for earthquake areas, and 41% for urban event areas. Forty-eight percent of respondents in the 2020 survey report they have talked with others about preparedness. By hazard region, the rate of respondents who have talked with others about preparedness is 56% for

tornado areas, 43% for flood areas, 63% for hurricane areas, 60% for wildfire areas, 54% for earthquake areas, and 44% for urban event areas.

Table 22

Secondary Survey Responses, Preparedness Behaviors, Talking About Preparedness with Others

Survey Year	Question Number	Question			Answer Options			Answer %
2013	3	Percent of respondents who self-reported talking about preparedness with others			Talked about getting prepared with others in community			31%
2017	1	Taking action	Talking with others about preparation		92% of respondents reported taking at least one of these preparedness actions. 46% took three or more actions			
2017	4	How do actions, preparedness influencers, and perceived preparedness differ by hazard area?	Talk with others	Hurricane	Winter storm	Earthquake	Extreme Heat	
				43%	24%	29%	26%	
2017	7	What is the relationship between actions and perceived preparedness?	Talked with others		No intent to prepare Intend to prepare Prepared			4% 30% 65%
2018	3	To what extent are people taking action to prepare for a hazard?			Talk with others on getting prepared			38%
2018	5	How does taking selected preparation actions differ by hazard area?			Has talked with others			
					Tornado areas			40%
					Flood areas			37%
					Hurricane areas			50%
					Wildfire areas			51%
					Earthquake areas			41%
					Urban event areas			35%
					Nationwide			38%
2018	6	Taking action to prepare for a disaster			Talk with others on getting prepared			38%
2019	3	To what extent are people taking action to prepare for a hazard?			Talk with others on getting prepared			45%
2019	5	How does taking selected preparation actions differ by hazard area?			Has talked with others			
					Tornado areas			54%
					Flood areas			44%
					Hurricane areas			63%
					Wildfire areas			47%
					Earthquake areas			54%
					Urban event areas			41%
					Nationwide			45%
2019	6	Taking action to prepare for a disaster			Talk with others on getting prepared			45%
2020	3	Six basic preparedness actions lay the groundwork for pursuing other actions			Talk with others on getting prepared			48%
2020	5	Preparedness actions by hazard area			Has talked with others			

			Tornado areas	56%
			Flood areas	43%
			Hurricane areas	63%
			Wildfire areas	60%
			Earthquake areas	54%
			Urban event areas	44%
			Nationwide	48%
2020	6	Taking action to prepare for a disaster	Talk with others on getting prepared	48%

Table 23 below depicts the survey questions and responses related to the stages of preparedness behavior. This category includes questions from five of the 10 surveys for a total of five questions. The stages of preparedness behavior identified by FEMA are as follows:

- Stage 1: Precontemplation – I have NOT prepared, and I DO NOT intend to prepare in the next year.
- Stage 2: Contemplation – I have NOT prepared, but I intend to prepare in the next year.
- Stage 3: Preparation – I have NOT prepared, but I intend to prepare in the next six months.
- Stage 4: Action – I have been prepared for the last year.
- Stage 5: Maintenance – I have been preparing for MORE than a year.

The 2014 survey reports 21% of respondents in Stage 1/Precontemplation, 19% in Stage 2/Contemplation, 9% in Stage 3/Preparation, 15% in Stage 4/Action, and 34% in Stage 5/Maintenance. The 2017 survey reports 17% of respondents in Stage 1/Precontemplation, 14% in Stage 2/Contemplation, 26% in Stage 3/Preparation, 17% in Stage 4/Action, and 25% in Stage 5/Maintenance. The 2018 survey reports 11% of respondents in Stage 1/Precontemplation, 17% in Stage 2/Contemplation, 19% in Stage 3/Preparation, 15% in Stage 4/Action, and 37% in Stage 5/Maintenance. The 2019 survey reports 10% of respondents in Stage 1/Precontemplation, 13% in Stage 2/Contemplation, 18% in Stage 3/Preparation, 15% in Stage 4/Action, and 44% in Stage

			<p>Stage 2: Contemplation: I have NOT prepared, but I intend to prepare in the next year. 17%</p> <p>Stage 3: Preparation: I have NOT prepared, but I intend to prepare in the next six months. 19%</p> <p>Stage 4: Action: I have been prepared for the last year. 15%</p> <p>Stage 5: Maintenance: I have been preparing for MORE than a year 37%</p>	
2019	1	What progress have we made in changing preparedness behavior?	<p>Stage 1: Precontemplation: I have NOT prepared, and I DO NOT intend to prepare in the next year 10%</p> <p>Stage 2: Contemplation: I have NOT prepared, but I intend to prepare in the next year 13%</p> <p>Stage 3: Preparation: I have NOT prepared, but I intend to prepare in the next six months 18%</p> <p>Stage 4: Action: I have been prepared for the last year 15%</p> <p>Stage 5: Maintenance: I have been preparing for MORE than a year 44%</p>	
2020	1	Measuring preparedness behavior change	<p>Stage 1: Precontemplation: I have NOT prepared, and I DO NOT intend to prepare in the next year 9%</p> <p>Stage 2: Contemplation: I have NOT prepared, but I intend to prepare in the next year 14%</p> <p>Stage 3: Preparation: I have NOT prepared, but I intend to prepare in the next six months 26%</p> <p>Stage 4: Action: I have been prepared for the last year 15%</p> <p>Stage 5: Maintenance: I have been preparing for MORE than a year 36%</p>	

Preparedness Actions

Table 24 below depicts the survey questions and responses related to respondents who report having gathered emergency supplies. This category includes questions from eight of the 10 surveys for a total of 16 questions. The 2012 survey reports that 82.9% of respondents have a three-day supply of food, 89.7% have a three-day supply of medication, 53.6% have a three-day supply of water, 77.7% have a working battery-operated radio, and 94.8% have a working battery-operated flashlight. For the 2013 survey, 52% of respondents indicate they have emergency supplies and 29% indicate they have updated their emergency supplies at least once a year. The same responses are reported for the 2014 survey. In the 2016 survey, 68% of respondents indicate they have at least two days of food and water, a flashlight, a portable radio, and spare batteries. Seventy-nine percent of 2017 survey participants report they have enough supplies for three or more days without electricity or running water. The rate of respondents with emergency supplies by hazard region is 58% for hurricane regions, 38% for winter storm regions, 41% for earthquake regions, 37% for extreme heat regions, and 39% for flood regions. Also in the 2017 survey, 51% of those who have gathered emergency supplies report they are prepared for a disaster. In the 2018 survey, 81% of respondents overall have gathered supplies for three or more days. By hazard region, 74% of respondents have gathered supplies in tornado areas, 67% in flood areas, 86% in hurricane areas, 85% in wildfire areas, 78% in earthquake areas, and 72% in urban event areas. In the 2019 survey, 80% of respondents overall have gathered supplies for three or more days. By hazard region, 80% of respondents have gathered supplies in tornado areas, 79% in flood areas, 80% in hurricane areas, 79% in wildfire areas, 79% in earthquake areas, and 71% in urban event areas. In the 2020 survey, 81% of respondents overall have gathered supplies for three or more days. By hazard region, 84% of respondents

have gathered supplies in tornado areas, 79% in flood areas, 82% in hurricane areas, 86% in wildfire areas, 83% in earthquake areas, and 75% in urban event areas.

Table 24

Secondary Survey Responses, Preparedness Actions, Have Gathered Emergency Supplies

Survey Year	Question Number	Question				Answer Options		Answer %
2012	1	Percentage of participants reporting household disaster or emergency preparedness, by preparedness measures and sociodemographic characteristics				Have a three-day supply of food		82.90%
						Have a three-day supply of medication		89.70%
						Have a three-day supply of water		53.60%
						Have a working battery-operated radio		77.70%
						Have a working battery-operated flashlight		94.80%
2013	5	Self-reported disaster supplies in homes				Reported having supplies		52%
						Reported having updated supplies (at least once a year) and named three or more supplies		29%
2014	3	Disaster supplies in home				Reported having supplies		52%
						Reported having updated supplies (at least once a year) and named three or more supplies		29%
2016	2	Does your family emergency preparedness plan include all the basics/at least two days of food and water, a flashlight, a portable radio and spare batteries, emergency phone numbers, and a meeting place for family members in case of evacuation?				Yes		68%
2017	1	Taking action		Stocking supplies		92% of respondents reported taking at least one of these preparedness actions. 46% took three or more actions 79% report that they have enough supplies for 3+ days without electricity or running water		
2017	4	How do actions, preparedness influencers, and perceived preparedness differ by hazard area?	Preparedness	Hurricane	Winter storm	Earthquake	Extreme Heat	Flood
				58%	38%	41%	37%	39%

2017	7	What is the relationship between actions and perceived preparedness?	Gathered supplies	No intent to prepare Intend to prepare Prepared	15% 32% 51%
2018	3	To what extent are people taking action to prepare for a hazard?		Gather supplies to last three or more days	81%
2018	5	How does taking selected preparation actions differ by hazard area?		Has gathered supplies for 3+ days	
				Tornado areas	74%
				Flood areas	67%
				Hurricane areas	86%
				Wildfire areas	85%
				Earthquake areas	78%
				Urban event areas	72%
				Nationwide	81%
2018	6	Taking action to prepare for a disaster		Gather supplies to last three or more days	81%
2019	3	To what extent are people taking action to prepare for a hazard?		Gather supplies to last three or more days	80%
2019	5	How does taking selected preparation actions differ by hazard area?		Has gathered supplies for 3+ days	
				Tornado areas	80%
				Flood areas	79%
				Hurricane areas	80%
				Wildfire areas	79%
				Earthquake areas	79%
				Urban event areas	71%
				Nationwide	80%
2019	6	Taking action to prepare for a disaster		Gather supplies to last three or more days	80%
2020	3	Six basic preparedness actions lay the groundwork for pursuing other actions		Gather supplies to last three or more days	81%
2020	5	Preparedness actions by hazard area		Has gathered supplies for 3+ days	
				Tornado areas	84%
				Flood areas	79%
				Hurricane areas	82%
				Wildfire areas	86%
				Earthquake areas	83%
				Urban event areas	75%
				Nationwide	81%
2020	6	Taking action to prepare for a disaster		Gather supplies to last three or more days	81%

Table 25 below depicts the survey questions and responses related to respondents who report having participated in preparedness training and/or drills. This category includes questions from six of the 10 surveys for a total of 14 questions. The 2013 survey reports that 55% of respondents have attended cardiopulmonary resuscitation training, 46% have attended first aid skills training, 35% have attended a meeting or training on how to be better prepared for a disaster, 11% have attended training as part of a CERT, and 33% have participated in a preparedness exercise or drill at their workplace, school, or home. The 2014 survey reports that 46% of respondents have participated in preparedness training in the last two years and 39% have participated in a preparedness drill in the last year. Twenty-two percent have volunteered to support emergency responder organizations or community preparedness or safety and 34% have volunteered to help in a disaster. In the 2017 survey, 61% of respondents who have attended a meeting or training report they are prepared. Of those who have participated in a drill, 51% report they are prepared. In the 2018 survey, 26% of respondents overall have attended a meeting or training. By hazard region, 24% of respondents have attended a meeting or training in tornado areas, 29% in flood areas, 28% in hurricane areas, 28% in wildfire areas, 29% in earthquake areas, and 24% in urban event areas. Also in the 2018 survey, 51% of respondents, overall, have participated in an emergency drill. By hazard region, 49% of respondents have participated in a drill in tornado areas, 51% in flood areas, 46% in hurricane areas, 49% in wildfire areas, 53% in earthquake areas, and 46% in urban event areas. In the 2019 survey, 30% of respondents, overall, have attended a meeting or training. By hazard region, 31% of respondents have attended a meeting or training in tornado areas, 31% in flood areas, 38% in hurricane areas, 34% in wildfire areas, 36% in earthquake areas, and 28% in urban event areas. Also in the 2019 survey, 49% of respondents, overall, have participated in an emergency drill. By hazard region, 53% of

respondents have participated in a drill in tornado areas, 48% in flood areas, 52% in hurricane areas, 47% in wildfire areas, 54% in earthquake areas, and 52% in urban event areas. In the 2020 survey, 29% of respondents overall have attended a meeting or training. By hazard region, 31% of respondents have attended a meeting or training in tornado areas, 27% in flood areas, 34% in hurricane areas, 35% in wildfire areas, 33% in earthquake areas, and 24% in urban event areas. Also in the 2020 survey, 56% of respondents, overall, have participated in an emergency drill. By hazard region, 59% of respondents have participated in a drill in tornado areas, 53% in flood areas, 57% in hurricane areas, 64% in wildfire areas, 63% in earthquake areas, and 50% in urban event areas.

Table 25

Secondary Survey Responses, Preparedness Actions, Have Participated in Preparedness Training and/or Drills

Survey Year	Question Number	Question	Answer Options	Answer %
2013	2	Self-reported participation in preparedness training	Attended CPR training Attended first aid skills training Attended meeting or training on how to be better prepared for a disaster Attended training as part of a community emergency response team Participated in a preparedness exercise or drill at your workplace, school, or home	55% 46% 35% 11% 33%
2014	1	Be informed	Participated in preparedness training in last two years Participated in preparedness drill in last year	46% 39%
2014	4	Be involved	Volunteered to support emergency responder organizations or	22%

				community prep/safety Volunteered to help in a disaster	34%
2017	1	Taking action	Attending a meeting or training	92% of respondents reported taking at least one of these preparedness actions. 46% took three or more actions	
			Taking part in a drill	Less than one half, however, report taking actions in the other areas (<i>aside from gathering supplies</i>). It goes as low as 18% who have attended a meeting or training	
2017	7	What is the relationship between actions and perceived preparedness?	Attended a meeting/training	No intent to prepare Intend to prepare Prepared	4% 33% 61%
			Participated in a drill	No intent to prepare Intend to prepare Prepared	9% 39% 51%
2018	3	To what extent are people taking action to prepare for a hazard?		Attend a local meeting or training Participate in an emergency drill	26% 51%
2018	5	How does taking selected preparation actions differ by hazard area?	Tornado areas Flood areas Hurricane areas Wildfire areas Earthquake areas Urban event areas Nationwide	Has attended local meeting	Has participated in a drill
				24%	49%
				29%	51%
				28%	46%
				28%	49%
				29%	53%
24%	46%				
26%	51%				
2018	6	Taking action to prepare for a disaster		Attend a local meeting/training Participate in an emergency drill	26% 51%
2019	3	To what extent are people taking action to prepare for a hazard?		Attend a local meeting or training Participate in an emergency drill	30% 49%
2019	5	How does taking selected preparation actions differ by hazard area?	Tornado areas Flood areas Hurricane areas Wildfire areas Earthquake areas Urban event areas Nationwide	Has attended local meeting	Has participated in a drill
				31%	53%
				31%	48%
				38%	52%
				34%	47%
				36%	54%
28%	52%				
30%	49%				
2019	6	Taking action to prepare for a disaster		Attend a local meeting/training	30%

			Participate in an emergency drill	49%
2020	3	Six basic preparedness actions lay the groundwork for pursuing other actions	Attend a local meeting or training Participate in an emergency drill	29% 56%
2020	5	Preparedness actions by hazard area	Has attended a local meeting	Has participated in an emergency drill
		Tornado areas	31%	59%
		Flood areas	27%	53%
		Hurricane areas	34%	57%
		Wildfire areas	35%	64%
		Earthquake areas	33%	63%
		Urban event areas	24%	50%
		Nationwide	29%	56%
2020	6	Taking action to prepare for a disaster	Attend a local meeting/training Participate in an emergency drill	29% 56%

CPR = cardiopulmonary resuscitation

Table 26 below depicts the survey questions and responses related to respondents who report having purchased hazard insurance. This category includes questions from five of the 10 surveys for a total of five questions. The 2014 survey reports that 21% of respondents have purchased flood insurance. For the 2017 survey, 60% of respondents with a household emergency plan also have flood insurance and 61% of those with disaster experience also have flood insurance. The 2018 survey indicates that 79% of respondents have homeowner or renter insurance, but only 20% of respondents have flood insurance. The 2019 survey shows that 80% of respondents have homeowner or renter insurance, but only 23% of respondents have flood insurance. The 2020 survey reports that 77% of respondents have homeowner or renter insurance, but only 22% of respondents have flood insurance.

Table 26*Secondary Survey Responses, Preparedness Actions, Have Purchased Hazard Insurance*

Survey Year	Question Number	Question		Answer Options	Answer %
2014	5	Mitigation actions completed for survey respondents' home		Purchased flood insurance	21%
2017	10	Flood insurance	Have a household plan	With flood insurance	60%
				Without flood insurance	44%
			Have experienced a disaster	With flood insurance	61%
				Without flood insurance	50%
2018	4	Are people prepared financially for an emergency?	Holding property insurance	Homeowner/ renter insurance	79%
				Flood insurance	20%
2019	4	Are people prepared financially for an emergency?	Holding property insurance	Homeowner/ renter insurance	80%
				Flood insurance	23%
2020	4	Financial resilience indicators	Holding property insurance	Homeowner/ renter insurance	77%
				Flood insurance	22%

Policy Findings

As indicated in the literature review in Chapter 2 and in the study design section in Chapter 3, the volume of preparedness policy in America is too great for the scope of this study. Therefore, policy is only analyzed within a narrow scope targeted at preparedness and policy to answer the research questions. This policy evaluation is limited to U.S. government publications related to preparedness and published from 2001 to 2021. Within this scope, policy documents are divided into three broad categories. These categories are presidential policy, congressional policy, and DHS policy. These categories represent a top-down approach to policy evaluation. Presidential policy drives congressional policy, and *vice versa*, both of which then drive DHS policy. All policies published within the timeframe are not included, but rather those policies most relevant to individual preparedness. Policies that were either foundational to preparedness policy or which had significant emphasis on individual preparedness are included, excluding

those policies unrelated to individual preparedness. The following categories are organized chronologically from oldest to most recent to show the progression of policy over time.

Presidential Policy

The first presidential policy related to preparedness is *Executive Order 13228: Establishing the Office of Homeland Security and the Homeland Security Council* (EO-13228; Bush, 2001). Less than one month after 9/11, President Bush established the Office of Homeland Security, the precursor of DHS, and the Homeland Security Council. While preparedness had been a part of American policy since World War I, this marked the formalization of preparedness, along with other things, such as prevention and response, within a dedicated government office. However, EO-13228 only addressed preparedness from a national and governmental perspective, stating: “The Office of Homeland Security shall coordinate national efforts to prepare for and mitigate the consequences of terrorist threats or attacks within the United States” (Bush, 2001, p. 51813). In 2002, President Bush issued his first of two NSSs (Bush, 2002), which was almost entirely focused on addressing and preparing for external threats to the United States. It addressed homeland security and the establishment of DHS, but it did not present a level of detail in addressing specific homeland security—and, thus, preparedness—issues as discussed later under NSS. This was partly a function of the separation of homeland security and homeland defense that occurred as a result of the establishment of the DHS, whereas both functions were previously under the DOD (Bush, 2002).

The most significant policy to come from the Bush Administration from a preparedness perspective is *Homeland Security Presidential Directive 8* (HSPD-8), which focuses on national preparedness (Bush, 2003). *Homeland Security Presidential Directive 8* established the foundation for all subsequent preparedness policy documents. This may be part of the problem

with individual and family preparedness. For example, HSPD-8 defined preparedness as, “the existence of plans, procedures, policies, training, and equipment necessary at the federal, state, and local level to maximize the ability to prevent, respond to, and recover from major events” (Bush, 2003, p. 1823). This definition, while accurate, leaves out anything related to individual responsibilities for preparedness. This top-down, federal-centric approach to preparedness within this foundational document is a major reason why subsequent efforts to improve individual preparedness have fallen short. *Homeland Security Presidential Directive 8* established an NPG, procedures for federal preparedness assistance, guidelines for equipment, training, and exercises, and federal department and agency preparedness. There is a minor reference to individual preparedness near the end of the document, which is similar to the level of detail on this subject in subsequent policies. Individual preparedness is addressed in HSPD-8 simply by directing the DHS secretary “to encourage active citizen participation and involvement in preparedness efforts [and] periodically review and identify the best community practices for integrating private citizen capabilities into local preparedness efforts” (Bush, 2003, p. 1826). That is the extent of that section of the directive. Following that is a requirement to provide timely and accurate preparedness information to citizens and to all levels of government (Bush, 2003).

The final Bush Administration policy is the 2006 NSS (Bush, 2006). This document is even more externally focused than the 2002 NSS, with very little attention given to homeland security issues beyond terrorism. This document is included more for continuity of NSS over time than for any contribution to preparedness policy.

The Obama Administration issued its first NSS in 2010 (Obama, 2010). This document reflects a major shift in focus from the Bush Administration and emphasizes preparedness in its “whole of government” approach. The document states, “The ideas, values, energy, creativity,

and resilience of our citizens are America's greatest resource [and] our citizens are the heart of a resilient country" (Obama, 2010, p. 16). This statement recognizes the important role an individual plays in overall national preparedness. It also represents a broader approach than solely focusing on terrorism as the Bush Administration had tended to do. The 2010 strategy also asserts that providing risk and emergency information to Americans, including steps they could take to prepare, adds emphasis to the importance of individual and community preparedness (Obama, 2010, p. 19). This shift to including individuals and families as important parts of national preparedness is reflected in subsequent Obama Administration policies.

The most significant of these policies from a preparedness perspective is Obama's follow-up to Bush's HSPD-8, which is *Presidential Policy Directive 8* (PPD-8; Obama, 2011). *Presidential Policy Directive 8* builds upon HSPD-8 by expanding the scope of preparedness and implementing a series of preparedness systems and frameworks to manage national preparedness. The policy states that responsibility for national preparedness lay with all levels of government, nonprofit and private sector organizations, and individual Americans (Obama, 2011, p. 1). Four key preparedness programs are implemented in PPD-8: the NPG (previously introduced by HSPD-8), the NPS, the Campaign for Building and Sustaining Preparedness, and the NPR. Necessary preparedness capabilities are presented in the NPG and the NPS directed activities that facilitate accomplishment of the goal (Obama, 2011, p. 1). The NPG describes the nation's core capabilities across five mission areas: prevention, protection, mitigation, response, and recovery. The NPG emphasizes that national preparedness is the shared responsibility of the whole community. The first edition of the NPG was released by the DHS in September 2011. The NPG is reviewed and updated routinely to make sure it properly aligns with ever-changing policies and conditions (Obama, 2011, pp. 1–2).

The NPS describes the recommended methods that the preparedness community can employ to build, sustain, and deliver capabilities to contribute to the goal of a secure and resilient nation. In November 2011, DHS published the NPS along with initiating efforts to design and implement plans, guidance, programs, and processes based on NPS methodology. Specifically, five national frameworks were implemented to coordinate roles and responsibilities for the FEMA mission areas and define cooperative and support relationships for the whole of community approach to delivering capabilities (Obama, 2011, pp. 2–4). The Campaign for Building and Sustaining Preparedness within the NPS facilitated the integration of new and existing community-based, nonprofit, and private sector efforts related to preparedness programs, research, and funding (Obama, 2011, p. 4). The NPR is an annual report from DHS and FEMA that summarizes all progress made in the past year related to building, sustaining, and delivering the NPG's core capabilities (Obama, 2011, p. 4).

The third Obama Administration document is the 2015 NSS (Obama, 2015). Unfortunately, this document is a return to the Bush Administration tendency to leave preparedness out of the national security equation. The only mentions of preparedness in this NSS are related to national preparedness to address foreign military threats (i.e., homeland defense rather than homeland security).

The Trump Administration's 2017 NSS (Trump, 2017) once again emphasizes preparedness for Americans as a key component of national security. This document identifies the need to build a culture of preparedness both within the government and among American citizens. According to this document, the Trump Administration planned to foster the development of a culture of preparedness, which would increase the resilience and preparedness of individuals, families, and communities (Trump, 2017, p. 14). This preparedness culture is

equally emphasized with citizens and with government agencies. Pillar 1 of the strategy is “Protect the American People, the Homeland, and the American Way of Life,” and states the following:

We must also take steps to respond quickly to meet the needs of the American people in the event of natural disaster or attack on our homeland. We must build a culture of preparedness and resilience across our governmental functions, critical infrastructure, and economic and political systems. (Trump, 2017, p. 7)

While this is a nonspecific objective, it provides the top-level guidance from the president to subordinate agencies at the federal and state levels to build systems to achieve the goal of a culture of preparedness.

The final and most recent document in this section is the Biden Administration’s *Interim National Security Strategic Guidance*, published in 2021 (Biden, 2021). In a predictable turn, this guidance reverts to minimal emphasis on individual preparedness. The extent of individual preparedness guidance relates to the ongoing response to the COVID-19 pandemic, which began in 2020. This document describes the Biden Administration’s intention to “rebuild and strengthen federal, state, and local preparedness to handle not just this pandemic, but also the next one” (Biden, 2021, p. 16). Essentially, the Biden Administration’s guidance addresses pandemic preparedness at the federal, state, local, and global levels, but that’s all.

Congressional Policy

Congressional policy related to preparedness primarily takes the form of public law through acts passed by congress. The first relevant public law is *Public Law 107-296* which is known as the *Homeland Security Act of 2002* (Congress, 2002). The Homeland Security Act established the DHS from the Office of Homeland Security and reorganized many existing

government agencies under the new department. The department's organization includes an Under Secretary for Emergency Preparedness and Response. Title V of the Homeland Security Act addresses emergency preparedness and response specifically and is the most relevant section of this act for the research at hand (Congress, 2002, pp. 212–213). The Directorate of Emergency Preparedness and Response is given the following primary responsibilities:

1. Ensure the effectiveness of emergency response providers to terrorist attacks, major disasters, and other emergencies.
2. Management of the Nuclear Incident Response Team, including establishing standards, certification, training and exercises, performance evaluation, and funding for the team to the Department of Energy and the Environmental Protection Agency.
3. Management of the federal government's response to terrorist attacks and major disasters, including oversight of the Domestic Emergency Support Team, the Strategic National Stockpile, the National Disaster Medical System, the Nuclear Incident Response Team, and the Metropolitan Medical Response System, and coordination of federal response resources.
4. Oversight of the recovery following terrorist attacks and major disasters.
5. Development and implementation of a NIMS with federal, state, and local government personnel, agencies, and authorities, to respond to terrorist attacks and major disasters.
6. Consolidation of all existing federal government agency emergency response plans into a single, coordinated national response plan.
7. Development and implementation of a comprehensive program for interoperative communications technology, including ensuring that emergency response providers acquire such technology (Congress, 2002, pp. 212–213).

The Homeland Security Act further transferred existing agencies and agency functions to the Directorate of Emergency Preparedness and Response:

1. The Federal Emergency Management Agency (FEMA).
2. The Integrated Hazard Information System of the National Oceanic and Atmospheric Administration (NOAA), which is renamed FIRESAT.
3. The National Domestic Preparedness Office of the Federal Bureau of Investigation.
4. The Domestic Emergency Support Teams of the Department of Justice.
5. The Office of Emergency Preparedness, the National Disaster Medical System, and the Metropolitan Medical Response System of the Department of Health and Human Services.
6. The Strategic National Stockpile of the Department of Health and Human Services (Congress, 2002, pp. 212–213).

The Homeland Security Act is an important step in the development of preparedness activities at the federal level. It consolidates federal preparedness efforts under DHS which previously existed among many different departments and agencies in the federal government (Congress, 2002, pp. 212–213).

The next congressional document is *Public Law 109-295*, which is known as the *Post-Katrina Emergency Management Reform Act of 2006*, a component of the *DHS Appropriations Act of 2007* (Congress, 2006). This act is designed to address several shortfalls in FEMA's capabilities observed in the preparation for and response to Hurricane Katrina in 2005. It modifies FEMA's leadership organization, transfers new and previously removed missions to FEMA, and gives FEMA additional authority and expanded autonomy to act in the nation's best interests before, during, and after a disaster event. This act gives FEMA the primary

responsibility for the five phases of emergency management: preparedness, protection, response, recovery, and mitigation. This act also further implements the NPG and NPS outlined in Bush's HSPD-8. Finally, the act requires FEMA to submit an annual Federal Preparedness Report to congress for better oversight of FEMA's activities (Congress, 2006).

The next congressional policy is *Public Law 109-347*, which is known as the *Security and Accountability for Every Port Act of 2006*, or the *SAFE Port Act* (Congress, 2006). This act is designed to enhance the security of maritime and aerial ports within the United States by preventing foreign ownership of ports and by integrating port preparedness efforts into the broader NPS. There is little in the way of individual preparedness provisions within the SAFE Port Act (Congress, 2006). Following this, Congress enacted *Public Law 110-53*, known as the *Implementing Recommendations of the 9/11 Commission Act of 2007* (Congress, 2007). This act consolidates eight different bills introduced in congress in 2007 in response to the 9/11 Commission's recommendations into a single act to address the various shortfalls identified by the 9/11 Commission. Overall, the act calls for the inspection of all air and sea cargo entering the United States and better defines the distribution of antiterrorism funding throughout the various levels of government in the United States. It also addresses the intelligence community's failures leading up to 9/11 and reforms many of the intelligence functions at the federal level to have greater congressional oversight. Further, it implements measures to strengthen interoperable communications during disaster events and to strengthen the ICS nationally. As with the previous congressional policy, there is little directly related to individual preparedness (Congress, 2007).

The next congressional policy is *Public Law 113-2*, known as the *Disaster Relief Appropriations Act of 2013*; specifically, Division B of this act is the *Sandy Recovery*

Improvement Act (SRIA) of 2013 (Congress, 2013). The SRIA makes a number of changes to FEMA's authority in responding to disaster events (Congress, 2013). The most significant and applicable changes include the following:

1. It authorizes FEMA to sign lease agreements with private owners of multifamily rental properties to be used as temporary housing for disaster victims.
2. It includes childcare as an eligible expense for federal assistance in certain disaster scenarios.
3. It directs FEMA to make updates to its criteria when assessing individual assistance needs (Congress, 2013).

Many of these changes are modifications to the Stafford Act, which is discussed at the end of this section. The result of the SRIA is to expand FEMA's ability to provide direct assistance to individuals and families in the event of a disaster (Congress, 2013).

The final and most important congressional policy is the *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, also known as the *Stafford Act*, which was originally passed in 1988 and has since been amended many times. The Stafford Act allows the president to declare national emergencies in response to major disaster events. These declarations allow the president to access disaster relief funding previously appropriated by Congress. The funding is intended to be provided to states that request federal assistance to handle the consequences of major disaster events. Some funds were provided directly to individuals following the disaster (Bea, 2008; Bea, 2010). For the purposes of this study, the most recent series of Stafford Act amendments are addressed, which were enacted in 2008, 2010, and 2013.

In 2008, the Stafford Act was amended as follows: Changes to the treatment of temporary employees, warning systems, and predisaster hazard mitigation under the Stafford Act, as well as

establishment of new authorities for current funding mechanisms and programs. These include the Emergency Management Performance Grant program and the Predisaster Mitigation program (Bea, 2008, pp. 6–8).

In 2010, the Stafford Act was amended as follows: Modernization of current public alert systems, allowance to provide health benefits to temporary federal employees during disaster response, and authorization of the National Urban Search and Rescue Response System. Also, it restarts rental and mortgage assistance programs, which had ended in 2000, with updated eligibility criteria and better tracking systems (Bea, 2010, p. 7).

In 2013, the Stafford Act was amended as follows by the SRIA of 2013: Implementation of new efficiency and quality procedures for disaster assistance programs, improved funding mechanisms for debris removal and facility restoration, and authorization to include childcare expenses as a part of disaster assistance. It also allows Native American tribes to request disaster assistance directly from the federal government, rather than going through county and state governments (FEMA, 2013, p. 1).

The final document in this section is less a policy and more a public relations document. There is no date on this publication by U.S. Representative Robert Pittenger (North Carolina, 9th District), titled *Preparing your Home, Family, and Business for Terrorist Attacks: Some Common Sense Suggestions on Getting Ready* (Pittenger, n.d.). This document is a guide for individuals and families on the threats facing the United States and the things they could do to prepare for disaster events. The document provides information for individuals and families for actions they can take to prepare for a myriad of disaster scenarios (Pittenger, n.d., p. 4). It provides hazard-specific steps for families to take depending on the threats present where they lived. Two of the most basic steps that individuals and families can take are to make a household

emergency plan addressing what their family will do in the event of a disaster and building an emergency kit to provide the family with its essential needs during a disaster event (Pittenger, n.d., pp. 21–23). The document states, “every family should have an emergency kit that can be readily accessed in the event of an emergency. This kit should include food, water, medications and other medical items, miscellaneous comfort items, repair kits and the like” (Pittenger, n.d., p. 23).

Department of Homeland Security Policy

This section discusses the various preparedness policies developed and published by DHS and FEMA. These policies are based on directives from either presidential policy or congressional policy and represent the implementation of policy. The first two documents come from the Office of the Press Secretary for DHS. The 2007 document, *Fact Sheet: Creating a Culture of Preparedness Among Schools* (Office of the Press Secretary, 2007) gives insight on some early DHS efforts to build preparedness at the individual and family level. One effort is the DHS ‘READY’ Campaign, which is a national public service advertising campaign designed to educate Americans on the need to prepare for emergencies, natural disasters, and terror attacks (Office of the Press Secretary, 2007, pp. 1–2). A component of this campaign is Ready Kids, which targets children to educate them about emergencies and the things they can do to help their families prepare. A second effort is building the CCP, a volunteer organization created in 2002 by the Bush Administration to get individuals and families involved in community preparedness and resilience. The document states that there are over 2,200 CCP councils operating at the local level throughout the United States, aimed at linking the public sector with the private sector at the local level to coordinate preparedness and response efforts (Office of the Press Secretary, 2007, p. 2). The next document from the Office of the Press Secretary of DHS is the 2009 news

release, *Secretary Napolitano Emphasizes Shared Responsibility for Readiness and Resilience* (Office of the Press Secretary, 2009). This is a press release based on a speech by Janet Napolitano, the DHS Secretary at the time. She states, “When families are prepared—when communities stand together and stand tall—so does our nation” (Office of the Press Secretary, 2009, p. 1).

The next document is a GAO report from 2010, *FEMA Faces Challenges Integrating Community Preparedness Programs into its Strategic Approach* (Jenkins, 2010). This GAO study looks at FEMA’s preparedness efforts, specifically the CCP and the Ready Campaign. The GAO found that FEMA had not been effective in measuring the results of the Ready Campaign or programs like the CCP. The stated reasons are that “(1) it relies on states to verify data for local program units and (2) it is unable to control the distribution of the Ready Campaign messages or measure whether the messages are changing the behavior of individuals” (Jenkins, 2010, p. 1). This report contains considerable detail on the importance of individual preparedness as a component of community and national preparedness. The author advises that individuals should have a 72-hour supply of food and water and that they should consider supporting a disaster response as a trained volunteer, since average citizens are often the first people on hand in the immediate aftermath of a disaster event (Jenkins, 2010, p. 1).

The report uses data from two national surveys to show that Americans are generally not very prepared for disasters due to two key indicators: household emergency plans and household disaster supplies. The statistics presented in these surveys support the author’s overall conclusions, which are:

According to Citizen Corps national surveys for 2003 and 2007, about half (50 and 53 percent, respectively) of U.S. households had disaster supplies in their homes, and fewer

had supplies set aside in their car or workplaces. [...] In 2003, 58 percent, and in 2007, 42 percent, of survey respondents reported having a household emergency plan. Although it is unrealistic to expect first responders to assist everyone in a disaster, 37 percent of those surveyed in 2007 said that the primary reason they were unprepared was because they believed emergency personnel would help them in the event of a disaster. Also, the 2003 and 2007 Citizen Corps surveys reported that 62 and 57 percent of respondents, respectively, said that they expected to rely on emergency responders in the first 72 hours following a disaster. (Jenkins, 2010, pp. 1–2)

These statistics illustrate several of the known problems with individual and family preparedness in America. Citizens believe they will be rescued by first responders or the military during a disaster, but that is simply not always the case. Furthermore, people fail to prepare because they assume the government will save them during a disaster. The GAO report explains that preparedness is the responsibility of the federal, state, local, and tribal governments as well as the individual (Jenkins, 2010, p. 7). The report states that it was FEMA’s responsibility to manage the CCP, the NPS, and the Ready Campaign. Importantly, the author points out the Ready Campaign messaging, which directs “individuals, families, and businesses to (1) get emergency supply kits, (2) make emergency plans, and (3) stay informed about emergencies and appropriate responses to those emergencies” (Jenkins, 2010, p. 8).

For the next series of documents, this analysis is less chronological. Instead, two different versions of the same document, published years apart, are compared to show changes in the policy over time. The first set is the NPG, for which the first edition (2011) and second edition (2015) are used. The NPG itself is the same for both documents, which is: “A secure and resilient Nation with the capabilities required across the whole community to prevent, protect

against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk” (DHS, 2011, p. 1; DHS, 2015, p. 1).

The 2011 NPG, published by FEMA through DHS, reflects updated preparedness guidance from the Obama Administration’s PPD-8. This document reflects the PPD-8 shift to inclusion of individual preparedness as a component of national preparedness. It states, “National preparedness is the shared responsibility of our whole community. Every member contributes, including individuals, communities, the private and nonprofit sectors, faith-based organizations, and federal, state, and local governments” (DHS, 2011, p. 1). This is a good step in the right direction. The NPG uses strong language to make the point that the individual is critical to national preparedness. The document explains that individual preparedness is fundamental to national preparedness. This means that one component of the NPG was for the federal preparedness efforts to contribute to improving the individual preparedness efforts, which then in turn contribute to the national effort (DHS, 2011, p. 1).

The 2015 NPG has a similar, though more refined, emphasis on individual preparedness. It reflects changes based on four years of real-world implementation of the PPD-8 directed NPS. The core of its individual preparedness portion is very similar to the 2011 NPG. It states, “Preparedness is the shared responsibility of our entire nation. The whole community contributes, beginning with individuals and communities, the private and nonprofit sectors, faith-based organizations, and all governments (local, regional/metropolitan, state, tribal, territorial, insular area, and federal)” (DHS, 2015, p. 1). The 2015 NPG also calls for the federal preparedness effort to center on providing information and resources to inform and educate individuals on the need to prepare and the steps to prepare for disasters. However, the 2015 NPG takes this a step further by integrating lessons learned from actual disaster events into the

preparedness process. The NPG gives the national preparedness effort a target to strive toward as a collective. Federal efforts drive state efforts, state efforts drive community efforts, community efforts drive individual and family efforts. There is no lack of direction from the federal level on the importance of individual preparedness, but the implementation lacks effectiveness at the individual level (DHS, 2015, pp. 1–2).

The next set of documents is the NPR. The reports from 2012 and 2019 are compared to show a change over time. *Presidential Policy Directive 8* directed FEMA and DHS to produce an annual NPR to summarize the progress made toward building, sustaining, and delivering the core capabilities identified in PPD-8 and the NPG. In the 2012 NPR, the author states, “While the federal government plays a critical role in coordinating national-level efforts, it is communities and individuals who lead efforts to implement preparedness initiatives throughout the Nation” (DHS, 2012, p. 1). In recognition of this, and with an understanding that all parts of society are affected by disasters, FEMA takes steps to work with state, local, tribal, and territorial governments to foster a whole of community approach to preparedness (DHS, 2012, p. 1). The NPR identifies two successful programs that have contributed to individual preparedness. The first is Community Emergency Response Teams (CERTs), which are managed by the CCP local councils. Since the program’s inception, close to 2,000 CERT programs have trained over 420,000 Americans in community resilience activities as of 2012. In addition to the CERT programs, the Ready Campaign has made an impact informing Americans about preparedness. As of 2012, nearly 4 million individuals used the Ready Campaign website and telephone number to obtain preparedness information and resources. The Ready Campaign continues to emphasize the importance of household preparedness plans and household emergency supplies for at least 72 hours (DHS, 2012, pp. 26–27).

The 2019 NPR provides a summary of “the progress made and challenges that remain in building and sustaining the capabilities needed to prevent, protect against, mitigate, respond to, and recover from the threats, hazards and incidents that pose the greatest risk to the Nation” (DHS, 2019, p. 2). This report is formatted differently from the 2012 NPR, but the information contained is generally consistent. While individual preparedness is still listed as a foundational component of national preparedness, there is a decided tendency to lean on national preparedness as the core of the report. As with many other DHS and FEMA documents, the preparedness discussion is limited to the local or community level as a component of higher-level preparedness efforts (DHS, 2019, p. 5). One unique component of this NPR is the “individual preparedness” boxes scattered throughout, which show tangible preparedness efforts that can be undertaken by individuals. The first is “Individual Preparedness: How Can I Keep Schools in My Community Safe?” While this is listed as an individual preparedness focus area, the tasks under this section are not very individually or family focused. Listed tasks include developing a school violence annex for the school emergency plan, conducting school climate or site assessments, creating school policies to address violence and bullying prevention, training staff to respond to violence (i.e., an active shooter), and communicating with students and families on violence prevention measures and procedures (DHS, 2019, p. 19). These tasks, while beneficial to the individual and family, are not individual and family preparedness tasks. The second of these sections is “Individual Preparedness: Cyber Hygiene.” This section discusses tasks for individuals to protect against cyber threats, which in this case equates to preventing loss of data and identity theft. Tasks for individuals in this section include using multiple login steps to verify identity, using secure internet browsers, using antivirus software, avoiding sharing personal information on social media, and only downloading from trusted sources (DHS, 2019, p. 27).

While these tasks are individually focused, the tie to preparedness is loose; this is more a prevention area than a preparedness area.

The next set of documents is the NPF, for which the publications from 2013 and 2016 are compared. According to the document, the NPF provides tasks for “the whole community—from community members to senior leaders in government— ... upon the discovery of intelligence or information regarding an imminent threat to the homeland in order to thwart an initial or follow-on terrorist attack” (DHS, 2013a, p. i). It is evident that these documents focus on FEMA’s prevention mission area. This is relevant to preparedness because there are roles in prevention identified for individuals, families, and households. The 2013 NPF states the following as the roles and responsibilities of individuals: “Individuals, families, and households play an important role in the prevention of terrorism by identifying and reporting potential terrorism-related information to law enforcement. Individual vigilance and awareness help communities remain safer and bolster prevention efforts” (DHS, 2013a, p. 5). This is the only part of this document that directs individuals and families to take any action. The individual and family are included in other areas whenever ‘whole of community’ is referenced, but the prevention tasks throughout this document exist far above the individual level. In the 2016 document, the roles and responsibilities of the individuals, families, and households are identical to that listed in the 2013 documents, reflecting no change in the role of individual preparedness within the NPF over time (DHS, 2016, p. 5).

The next policy is the NPIF published in 2013. The document asserts that the NPIF establishes “the strategy and doctrine for building, sustaining, and delivering the core capabilities identified in the National Preparedness Goal” (DHS, 2013b, p. 1). The NPIF gives an overview of the NPF, the National Mitigation Framework (NMF), the National Response Framework

(NRF), and the NDRF, which all tie back to the NPS and the NPG. The NPIF addresses the role of the individual and family as a part of the ‘whole of community’ approach to preparedness encouraged in PPD-8 (DHS, 2013b, pp. 1–2). It states that “engaging the whole community is critical to successfully achieving a secure and resilient Nation, and individual and community preparedness is a key component” (DHS, 2013b, pp. 1–2). There are times when individuals and communities are combined into a single category, seeming almost synonymous, which is not the case. Individual preparedness contributes to community preparedness, but they are not one and the same.

The next document is the 2016 NDRF. The document describes the NDRF, which “establishes a common platform and forum for how the whole community builds, sustains, and coordinates delivery of recovery capabilities” (DHS, 2016, p. i). The NDRF lists key elements or guiding principles of recovery, the first of which is “Individual and Family Empowerment.” This guiding principle is listed first because it is seen throughout the NPS as the foundational component to preparedness. The NDRF states that recovery is dependent on the ability of individuals and families to bounce back from losses, while maintaining their mental and physical health (DHS, 2016, pp. 5–6). It explains that recovery efforts must be inclusive of all socioeconomic categories of individuals and allow for the needs of disabled individuals. Successful recovery requires that individuals be provided with tools and support necessary to recover themselves along with recovering the community that is impacted by a disaster event, including both physical losses and psychological or emotional trauma experienced (DHS, 2016, 6). The NDRF presents more detail on the roles and responsibilities of the individual and family than many other documents within the NPS. It begins by explaining that individuals, families, and households play a critical role in their own recovery as well as the community’s recovery.

The first responsibility is to have a household emergency plan and emergency supplies set aside before a disaster occurs to aid in recovery afterward. Individuals and families that prepare for a disaster reduce their own needs after a disaster and position themselves to help others within the community recover from the disaster. Additional steps individuals can take include acquiring hazard property insurance (i.e., earthquake, flood, etc.) and making improvements to their homes to make them more survivable during a disaster event. Steps, such as strengthening the home's structure, weatherproofing the roof, and removing trees that can fall on the home, make the family better able to survive a disaster and potentially reduce the need for repairs after the disaster. The NDRF also encourages individuals and families to become involved in their community's preparedness efforts by participating in training, exercises, and drills, becoming aware of planning and preparedness efforts, and helping the community recover from a disaster event (DHS, 2016, p. 11).

The next document is the NRF published in 2019, which is the fourth edition of this document. The document's authors state that the NRF "provides foundational emergency management doctrine for how the Nation responds to all types of incidents" (DHS, 2019, p. ii). The NRF details the roles and responsibilities of individuals and families during the response to a disaster, emphasizing that individuals and families are the first ones active in any response because of their proximity to the event. All responses begin and are controlled at the local level by first responders and community leaders, who have a more comprehensive understanding of the capabilities and needs of the local community. Resources at higher levels are provided to the local-level response to fill shortfalls and capability gaps at that local community level (DHS, 2019, p. 16). Individuals can also contribute during a response by receiving training ahead of a disaster and volunteering for any of the number of volunteer organizations that help during

disaster responses. Finally, individuals should monitor emergency communications during disasters and follow the instructions given by local authorities (DHS, 2019, pp. 27–28).

The final document in this section is a FEMA publication from 2019, *Building Cultures of Preparedness: Report for the Emergency Management Higher Education Community* (FEMA, 2019). This document was produced by FEMA as a means of translating its strategic vision of building a culture of preparedness into tangible actions, in this case specific to the education community. This document is important because it represents FEMA's own recognition that its efforts to drive individuals and families to prepare for disasters have been ineffective. FEMA asserts that due to the vast diversity of people in America, "a one-size-fits-all strategy is not well-suited to the specific demands of variable and distinctive environments—our Culture of Preparedness will have to be built one community at a time" (FEMA, 2019, p. 4). According to FEMA, preparedness is a local, rather than a national, matter and each local community in the United States has different needs and capabilities. Despite a decade of effort by FEMA and DHS, this document reports that "attempts to enhance levels of preparedness among individual households, communities, and various organizations which lie outside the emergency management profession's immediate sphere of control have shown little to no sign of improvement" (FEMA, 2019, p. 6). Even the Ready Campaign, FEMA's flagship preparedness public relations campaign, did not produce the desired results. Surveys indicate that a very small percentage of Americans were fully prepared for a disaster event, with just under half of survey respondents indicating they had not prepared at all (FEMA, 2019, p. 6). The Federal Emergency Management Agency states in this document that "the dismal projections of personal preparedness recorded in survey after survey over the last two decades suggests probably even less preparedness than reported, as household surveys tend to produce a bias in respondents

answering optimistically” (FEMA, 2019, p. 6). Despite this admission, FEMA has continued to pursue the same methods of informing the public on preparedness (FEMA, 2019, p. 6). Perhaps the most damaging finding in this report, which contributed to the research for this dissertation, was as follows:

FEMA’s own research on preparedness, such as the results from the 2009 Citizen Corps National Survey, have long shown that public outreach campaigns and education efforts were having no effect on preparedness levels. ... These research findings have caused the organizations mounting these campaigns to reflect on the effectiveness of their messaging and question how individual preparedness should be measured. ... But despite an increasing accumulation of lessons learned and research demonstrating that key policy efforts aimed at individual preparedness have failed to provoke changes in preparedness behavior, virtually identical campaigns continue unabated. (FEMA, 2019, p. 7)

Case Study Findings

The process of conducting a multiple-case study requires researchers to first summarize individual cases, draw cross-case conclusions, and develop a cross-case report. Researchers use evidence from multiple cases to generalize findings and develop theories. With a multiple-case study, researchers can examine the differences both within and between cases, with the goal of replicating findings across cases. Case studies are used to draw comparisons, so it is important that researchers choose cases carefully to enable predictions of similar results across multiple cases or predict contrasting results based on a theory (Yin, 2018).

The selected case studies provide three distinct settings for the study of preparedness in America. At its core, preparedness intends to reduce the impact of a disaster event on those individuals and families present within a disaster zone. The degree to which these individuals

and families are prepared for the impacts of a disaster event is the degree to which they are able to survive the disaster's impacts. To study preparedness levels in the absence of a disaster is challenging at best, impossible at worst. However, in the aftermath of a disaster, it becomes obvious who was prepared and who was not. This provides key insights for the study of preparedness.

For this study, three case studies were selected that represent a range of locations—and thus a range of demographics—and a range of disasters. All these case studies involve catastrophic natural disasters that occurred between 2010 and 2020 in the United States and involved multiple jurisdictions within the affected area. First is the Boulder, Colorado floods of 2013. Second is Hurricane Michael, which struck Panama City, Florida in 2018. Third is the COVID-19 pandemic, which affected the entire world beginning in 2020, but for which the city of Kirkland, Washington is used to study because it was the first U.S. city with a major COVID-19 outbreak.

These case studies begin with a synopsis of the case, which briefly introduces the problems and issues found in the case study and presents the key points of the study. Next are the findings for the case, which present, in more detail, the specific problems discovered in the case study and provide supporting evidence from the case study. This is followed by a discussion section, which summarizes each problem and presents arguments and explanations for each problem's relation to preparedness. Finally, there is a conclusion section, which summarizes the findings and discussion.

Floods, Boulder, Colorado (2013)

The first case study is the 2013 floods in Boulder County, Colorado. According to the City of Boulder, these floods occurred “From Sept. 11 through 15, 2013, [when] the Front Range

region experienced significant rainfall, causing flooding, loss of life, and wide-spread damage” (City of Boulder, n.d.). This case study focuses on the flooding in the city of Boulder.

Synopsis. September 2013 brought a week of heavy rain to Boulder County, Colorado, which would eventually bring more rainfall in a single week than Boulder County historically receives in a full year (Water Damage Defense, n.d.). The heavy rainfall covered much of the state of Colorado, but primarily affected a stretch of land extending from Colorado Springs to Fort Collins (FEMA, 2014, p. 1). On September 9, 2013, a slow-moving storm originating in the Pacific Ocean west of Mexico moved into and stalled over Colorado over the Front Range, which is part of the Rocky Mountains west of Denver. The rainfall grew stronger on September 10–11 before becoming what NOAA dubbed a “1,000-year rainfall event” (Colorado DHSEM, 2015, p. 1).

Prior to the storm, the Boulder area had weathered a late summer heat wave. Water Damage Defense state “Sunday, September 8th [tied] a heat record at 93 degrees. Locals were ready for autumn’s cooler weather, ideal for hiking and biking in the area’s extensive Open Space trail network” (Water Damage Defense, n.d.). With the storm headed to Colorado, however, weather forecasters warned that heavy rainfall was expected across the state over the next few days (Castellani, 2017). According to Castellani, as the storm settled into place, “temperatures plummeted more than 30 degrees behind the associated front (aided by cooling from clouds/rain), from the mid-90s on the September 8th, to the low 60s on the 10th” (Castellani, 2017). The type of storm was called a “cut-off low,” which means that the storm was a low-pressure system that was cut off from the prevailing winds, stalling in its movement and becoming extremely challenging to predict for weather forecasters (Castellani, 2017). The result was almost continuous rainfall for seven days, from September 9th through the 15th. By

September 11th, Clavin et al. report that “the National Weather Service released a statement that the soils of the Front Range were already saturated and warned that any further rainfall would have difficulty being absorbed by the ground” (Clavin et al., 2017, p. 5).

From September 11 to 15, 2013, Colorado experienced historic rainfall; estimates of the amount of rain vary by source from 14.71 inches (Clavin et al., 2017, p. 5) to 17 inches (Colorado DHSEM, 2015, p. 1) to more than 18 inches (City of Boulder, n.d.). Regardless of the rainfall total, it exceeded historical five-day totals and, in some counties, exceeded annual rainfall. The heavy rain severely flooded Boulder County and the city of Boulder due to soil saturation and several wildfires in recent years that had reduced the soil’s ability to stem the flow of water (FEMA, 2014, pp. 1–2). These floods destroyed property and threw thousands of lives into chaos. Boulder County and the City of Boulder were designated as Federal Disaster Areas by FEMA (Water Damage Defense, n.d.; City of Boulder, n.d.). The damage and loss of life were staggering. The Colorado DHSEM report that across Colorado, “the flooding killed 10 people, destroyed 1,882 structures, and damaged at least 16,000 other structures” (Colorado DHSEM, 2015, p. 1). Within Boulder County, FEMA tallied over 11,860 homes damaged by flooding, with 445 of those considered majorly or severely damaged. The Boulder County Transportation Department reported that more than 200 properties lost access due to damaged roads, bridges, and culverts (Clavin et al., 2017, p. 8).

Findings. The Boulder County, Colorado region is naturally vulnerable to flash flooding (Castellani, 2017). The 1976 flood of nearby Big Thompson Canyon, one of the worst floods on record, claimed 144 lives; however, Uccellini asserts that rainfall event was small while “the footprint of the September 2013 event was vast, covering most of the Front Range of the Rocky Mountains of Colorado” (Uccellini, 2014, p. 1). Awareness of this flash flooding risk was

heightened in the years leading to the 2013 flood due to several major wildfires that left behind vast burn scars across the Front Range (Uccellini, 2014, p. 1). Authorities in the region made concerted efforts following these fires to inform the public of the flood risk posed by recent burn scars. The Boulder County Emergency Management Agency cited postfire public outreach and education efforts as a major enhancement to community preparedness (Uccellini, 2014, 28).

Boulder County represents two different cultures when it comes to disaster preparedness and response. Within the city of Boulder, residents are known for viewing government assistance and intervention as a good thing, which results in a reliance on government aid during a disaster. Outside Boulder, county residents are the opposite of city residents, relying largely on themselves and their neighbors during disaster events rather than relying on government aid (MacClune et al., 2014, pp. 35–36). While the government can do many things during a disaster, it cannot do everything for everyone. According to MacClune et al., the self-reliant culture of the rural communities “paid off well in the mountain towns, many of which were cut off during the floods, leaving residents to improvise on their own until outside help could arrive” (MacClune et al., 2014, p. 36). These two different cultures or disaster mindsets are the key to analyzing the 2013 floods.

The 2013 Colorado flood left thousands without electricity and forced thousands to evacuate their homes. It destroyed roads, bridges, utilities, businesses, and homes (FEMA, 2014, p. 2). The Federal Emergency Management Agency reports that the combination of mountainous terrain and loss of roadways due to flooding “left many mountain communities—and their residents—isolated and trapped as floodwaters rose around them. In narrow river valleys, mudslides and mudflows trapped people and cars on roadways leading into and out of small communities” (FEMA, 2014, p. 2). Despite the destruction caused by the flooding, Boulder

County residents persevered. Neighbors began helping neighbors respond to and recover from the flood, especially in rural areas (Water Damage Defense, n.d.). In the city of Boulder, early warning and notification limited fatalities by enabling residents to evacuate before becoming trapped by the flood waters (Colorado DHSEM, 2015, p. 2). Preparedness prior to the flood and response during the flood were at their strongest where individuals could access basic resources and act independently to solve problems. An example of this is the city of Boulder's potable water system, which was maintained throughout the flood through resourcefulness and creative problem-solving by staff. Another example is the *ad hoc* network of ham radio operators within Boulder County that formed in response to failed communications systems, becoming the backbone of communications in isolated communities (MacClune et al., 2014, p. 3). Citizens in urban areas tend to expect government assistance during disasters, but the government's capacity to provide assistance during large-scale disasters like the 2013 flood becomes increasingly limited to no more than life-threatening issues. This limited capacity became an issue early in the 2013 flood, requiring those in isolated rural and mountain communities to rely on their own preparations and skills and those of their neighbors (MacClune et al., 2014, p. 4). Many residents who otherwise would have relied on government support were forced to survive on their own and deal independently with cut-off roads and flooded homes for several days before help could arrive (MacClune et al., 2014, p. 35).

Prior to the 2013 flood, both Boulder County authorities and its citizens took many steps to prepare for and mitigate the effects of flooding. MacClune et al. describe preparedness activities such as "adjustments to their homes or land to reduce their risk: berms to divert water, swales to direct it off the property, culverts to allow streams to pass underground, sump pumps in basements" (MacClune et al., 2014, p. 19). Homeowners took these steps almost entirely on their

own and at their own cost, which shows a high degree of independence. However, these actions generally did not consider impacts to other homes or areas, nor were they generally coordinated with other homeowners. Additionally, many flood-related mitigations undertaken in the wake of the wildfires were not maintained leading up to the 2013 floods. An example of this is the many sump pumps that either no longer worked or which had been removed in the intervening years. This behavior is due to the long-term nature of the risks. There had been no severe floods in some areas for more than 50 years, so current residents were often either unaware of the risk or considered the risk so low that it was not worth preparing. This is a common occurrence during a major disaster. People generally do not maintain equipment when it is not used regularly, but especially so when the equipment is specialized for a specific threat (MacClune et al., 2014, p. 19).

Additional mitigation measures were taken during the flood itself. Homeowners took steps to get flowing water further away from their homes in order to save their property. Hardware stores in the area recorded major increases in the sale of tools like shovels and pumps near the beginning of the disaster. In some neighborhoods, groups of homeowners worked together to divert water away from the whole neighborhood by using flood debris to create channels along roads to keep the water flowing on the road rather than through properties. These efforts were successful in a number of cases, but for the most part these efforts unintentionally diverted water from one property onto another, which may not have otherwise been affected (MacClune et al., 2014, p. 19). According to MacClune et al., observers noted afterward that “it would have been very helpful if there had been trained volunteers who knew how to build spontaneous structures to a) be effective and b) minimize downstream damage” (MacClune et al., 2014, pp. 19–20). Another thing that could have helped would have been clearer

communication of flood impact information, especially in the void of information between what the individual could see and what was going on in the larger community (MacClune et al., 2014, p. 20).

Discussion. The 2013 Boulder County flood was the result of a once in 1,000 years event, which had only a 0.1% chance of occurrence in any given year. The record rainfall coupled with the burn scars from previous years' wildfires made the flooding almost inevitable and resulted in what Water Damage Defense describes as "immense destruction in Boulder County, leading to four deaths and crippling property damage" (Water Damage Defense, n.d.). In one week's time, many residents of Boulder County found themselves without homes and struggling to put their lives back together (Water Damage Defense, n.d.). However, there were signs leading up to September 9, 2013, that allowed weather experts to predict some of what would unfold. Uccellini notes that the NOAA Climate Prediction Center had identified the "atmospheric ingredients necessary for potential heavy rainfall more than a week in advance, as highlighted in its 6–10 and 8–14 day outlooks, which forecast the establishment of a wetter than normal pattern" (Uccellini, 2014, p. 1).

Beginning five days before the rain began, the National Weather Service (NWS) issued forecasts predicting two to four inches of rain along the Front Range. As time passed, the NWS began to highlight areas of the Front Range that could experience flash flooding. These predictions increased in accuracy the closer the storm came to dumping its contents on Boulder County. The NWS used their Short Range Ensemble Forecast System (SREF) to attempt to predict the impacts of the coming storm (Uccellini, 2014, pp. 1–2). While the SREF was more consistent in its predictions, Uccellini points out that the NWS "could not accurately anticipate and predict the timing, magnitude, and extent of heavy rainfall that struck the Front Range"

(Uccellini, 2014, p. 2). Only a portion of the Front Range was under a flash flood watch prior to the first heavy rains falling on September 11. Once the rain began in earnest, the NWS local offices in Boulder and Pueblo reacted quickly by issuing 78 flash flood warnings for areas throughout Colorado (Uccellini, 2014, p. 2). These warnings allowed local authorities to begin immediate evacuations in the city of Boulder and contributed to the low death rate for such a large flood event.

Conclusion. The 2013 Boulder County flood was a once in 1,000 years event which devastated Boulder County and many other areas in central Colorado. However, the efforts of the NWS in warning the public and the efforts of Boulder County authorities and citizens in preparing for flooding resulted in fewer deaths by far than could be expected. Additionally, efforts before and during the flood by individual citizens and neighborhood groups to prepare for and mitigate the effects of the flood show how resilience and preparedness can affect the impacts of a disaster event on an area and population.

Hurricane Michael, Panama City, Florida (2018)

The second case study is the 2018 Hurricane Michael, which made landfall near Panama City, Florida on October 10, 2018. Hurricane Michael was a Category 5 Hurricane, which reached maximum sustained winds of 155 miles per hour. The storm caused extensive damage to the Florida Panhandle, especially Panama City and nearby Mexico Beach, and maintained hurricane strength far into southwest Georgia (Florida State Emergency Response Team (SERT), 2019, p. 8). Hurricane Michael would become what the Florida SERT describes as “the most powerful ever to impact the Florida Panhandle region and the third most intense to make landfall in the mainland United States in recorded history” (Florida SERT, 2019, p. 8). This case study focuses on the hurricane landfall and impacts in Panama City.

Synopsis. As the most powerful hurricane ever to strike the Florida Panhandle, Hurricane Michael caused extensive catastrophic damage to the Bay County region, centered on Panama City. At landfall on October 10, 2018, Hurricane Michael was a Category 5 Hurricane, sustaining winds up to 155 miles per hour (NWS, n.d.). Braun recounts that the eye of the hurricane passed over Panama City shortly after 12:00 p.m., “shearing trees in half, twisting roofs from their supports and tossing truck trailers and RVs like toys” (Braun, 2018). It destroyed communications, power, and transportation infrastructure across the county. According to the Florida SERT, at its height, it caused “over 400,000 power outages, damaged three state roads, required 44,750 shelter stays, and downed over 40,000 communication lines” (Florida SERT, 2019, p. 4). Hurricane Michael resulted in nearly \$35 billion in damage and 16 deaths in the United States before losing its strength over central Georgia (Beven et al., 2019, p. 1).

This massive hurricane originated on October 2, 2018, in the southwest Caribbean as an average, weak tropical storm (Florida SERT, 2019, p. 8). Following a week of development, the storm moved into the warmer waters of the Gulf of Mexico and rapidly evolved into a major hurricane as it continued north toward the Florida and Alabama coastline (NWS, n.d.). By October 7, the disturbance transitioned to a tropical depression, after which the Florida SERT states it “intensified into a hurricane on Monday, October 8, reached major hurricane status on Tuesday, October 9, and maintained full power and speed as it made landfall in the Panhandle on Wednesday, October 10” (Florida SERT, 2019, p. 8). Hurricane Michael is the fourth most powerful hurricane to hit the United States in its recorded history and the strongest to hit the Florida Panhandle. The three stronger storms were the Labor Day Hurricane of 1935, Hurricane Camille in 1969, and Hurricane Andrew in 1992 (NWS, n.d.).

In response to the coming storm, the Florida State Emergency Operations Center (SEOC) activated on Sunday, October 7 to prepare for the hurricane response effort (Florida SERT, 2019, p. 8). The Governor of Florida declared a state of emergency via EO 18-276 the same day (Florida SERT, 2019, p. 11). On Monday, October 8, the SEOC issued Michael Advisory #9, designating Hurricane Michael as a Category 1 Hurricane (Martin, 2018, pp. 6–9). Based on the storm’s growth, the state of emergency was amended the same day via EO 18-277 (Florida SERT, 2019, p. 11). The SEOC issued Michael Advisory 11A on Tuesday, October 9, when Hurricane Michael elevated to a Category 2 Hurricane. Later that day, Michael Advisory #13 notified the public that the storm had increased to a Category 3 Hurricane (Martin, 2018, pp. 6–9). A pre-landfall Presidential Disaster Declaration was issued on October 9, which provided funding support for debris removal, emergency protective measures, and direct federal assistance to individuals in 14 Florida counties (Florida SERT, 2019, p. 11). In the days leading to Hurricane Michael’s landfall, Florida authorities ordered more than 120,000 people in the Florida Panhandle to evacuate (Shrikant, 2018). The Florida SERT reports that, though the National Hurricane Center initially predicted a Category 3 at landfall, “the State Coordinating Officer insisted the state prepare for a level-higher Category 4 landfall. Ultimately, the SERT estimates that 375,000 Floridians were ordered to evacuate with over 6,500 individuals seeking shelter in 44 shelters” (Florida SERT, 2019, p. 8).

At 2:00 a.m. on Wednesday, October 10, the SEOC issued Michael Advisory #14A when the storm reached Category 4 Hurricane Strength. Ten hours later, Michael Advisory #16A announced that Hurricane Michael was a Category 5 Hurricane with winds in excess of 155 miles per hour, just prior to landfall (Martin, 2018, pp. 6–9). Hurricanes bring devastating and life-threatening winds and coastal flooding from the storm surge, which in the case of Hurricane

Michael was expected to reach nine to 14 feet in some areas (Shrikant, 2018). When it had blown itself out over Georgia and the Carolinas, Hurricane Michael had directly caused 16 deaths, seven of which were in Florida. These seven deaths included five who died due to drowning in the storm surge and two who died further inland from falling trees. In addition, Hurricane Michael caused 43 indirect deaths in Florida, caused by falls during debris clean up, vehicle accidents, and medical issues which were exacerbated by the storm (Beven et al., 2019, p. 10). The storm surge and wind caused severe property damage throughout Bay County, but especially between Panama City and Mexico Beach. More than 45,000 structures were damaged and more than 1,500 were destroyed in Bay County, in addition to multiple coastal roads being partially or completely destroyed (Beven et al., 2019, p. 11).

Hurricane Michael damaged and destroyed homes, vehicles, and infrastructure throughout the Florida Panhandle as it moved north. More than 400,000 homes and businesses lost power for days to weeks, caused by downed power lines and falling trees. Communications infrastructure was devastated as well, which presented challenges in responding to the devastation after the storm had passed (Florida SERT, 2019, p. 8). Panama City alone had to remove 5.7 million cubic yards of debris, which exceeded the amount of debris removed from 62 counties following Hurricane Irma in 2017 (McCreless, 2021).

Findings. The State of Florida began public warning and alert messaging nearly one week before Hurricane Michael made landfall on October 10, 2018. The state called for evacuation of coastal communities and preparedness for the storm, even when it was still categorized as a relatively weak storm. Hurricane Michael rose from a Category 1 to a Category 4 Hurricane in less than 48 hours, leaving those who had assumed the storm would be weak scrambling to get ready for the strongest storm ever to strike the region (Florida SERT, 2019, p.

17). Still, despite the strength of the winds and storm surge, there were only seven deaths in Florida during the storm, and 43 additional deaths in the storm's aftermath: a small price for such a devastating storm. This is a testament to the preparedness of the government authorities and the individual citizens in the storm's path (NWS, n.d.).

Almost every business, home, vehicle, and tree in Panama City was damaged or destroyed in some way by Hurricane Michael (Braun, 2018). Braun states that following the storm, one Florida resident said, "I believe that the next time, don't be a hero, leave. You can buy new clothes, you can't buy a new life. Trust your heart, not your head. Your heart says leave then leave" (Braun, 2018). Hurricane Michael ruined much of the public housing and apartments in Panama City, which were the majority of the city's affordable housing. This left many homeless, either becoming dependent on FEMA-supplied temporary housing units or having to leave the area (Allen, 2019). The storm surge and accompanying wave action caused water inundation in excess of 14 feet from Panama City to Mexico Beach. In some cases, water was high enough to enter the second story of homes and buildings (NWS, n.d.). Further inland in Bay County, the NWS reports "record flooding was observed on the Econfinia Creek at State Road 20 with 26.17 feet. This resulted in the SR-20 bridge being overtopped" (NWS, n.d.). Two hospitals in Bay County were severely damaged and experienced problems with power and clean water in the days following the storm (NWS, n.d.). The NWS further reports that Tyndall Air Force Base, near Panama City, "experienced catastrophic damage with every building on base experiencing some roof damage" (NWS, n.d.). Communication infrastructure across the Florida Panhandle suffered major destruction, disrupting cellular service and internet, which are both critical for authorities to push information to the public (Florida SERT, 2019, p. 17). According to the Florida SERT, without these networks, authorities "adapted to the unique challenges of

Hurricane Michael and coordinated with private sector radio stations and Amateur Radio associations to relay urgent information to residents immediately post-landfall” (Florida SERT, 2019, p. 17).

Preparedness is an interesting challenge for areas that experience tropical storms and hurricanes on a routine basis, sometimes more than once per year. Many choose to leave coastal areas in the days before a hurricane strikes, returning later to pick up the pieces. Others choose to weather the storm. Homeowners prepare for a storm by sealing windows and doors, boarding up windows, and stocking up on supplies like food, water, and batteries. The last-minute rush for emergency supplies causes chaos at hardware and grocery stores (Shrikant, 2018). Shrikant points out that stores in hurricane zones expect a buying frenzy leading up to a storm, so they “stock extra cases of water, batteries, and toilet paper in anticipation of crowds, and the stereotype is that people stock up on bread, milk, and eggs” (Shrikant, 2018). While some buy essentials like water, batteries, and canned food, others buy perishable food like milk and bread—despite likely power outages following the storm—and still others buy party supplies like alcohol, chips, and snacks (Shrikant, 2018). There is a well-documented tendency of people to stockpile junk food before a storm rather than essentials. Shrikant states, for example, that “Walmart reported that it orders extra strawberry Pop-Tarts before a hurricane because sales spike significantly” (Shrikant, 2018).

For a disaster the size of Hurricane Michael, there is ultimately no way to be completely prepared. Being flexible and observing information from authorities is critical in deciding what to do before, during, and after a storm strikes. There is often little time to react, since some events like Hurricane Michael can change from insignificant to catastrophic in a day or two (Martin, 2018). Research shows that while on the surface some preparedness measures may seem

irrational, there is an explanation for seemingly strange purchases (Shrikant, 2018). Shrikant's research indicates that "people bought high-fat, perishable foods to promote comfort and calmness, not because they thought these were practical purchases" (Shrikant, 2018). This emotion-driven consumption has a purpose, as the positive emotions that come from eating comforting food can lower stress and undo the effects of negative emotions (Shrikant, 2018).

Discussion. Beatty, Shimshack, & Volpe conducted a study in 2018, *Disaster Preparedness and Disaster Response: Evidence from Sales of Emergency Supplies Before and After Hurricanes*. This study shows that many people do not buy essentials like batteries and bottled water before a storm (Shrikant, 2018). The authors note that "although many people buy hurricane preparedness supplies roughly one day before landfall, many buy them afterward, often after the government has warned residents to be off the roads" (Shrikant, 2018). This study shows that people do not necessarily follow the advice given to them by authorities. By analyzing sales receipts from before and after a major storm, Beatty et al. discovered that the purchases made after the storm show there is a need for emergency supplies, which indicates that these were not purchased before the storm struck. This research brings to light several possible explanations for individuals failing to prepare for a hurricane (Shrikant, 2018):

One is that people may not be receiving information about a threat, and if they are, they are not perceiving the information as a threat to them personally. Historically, [Beatty et al.] says, the number of direct deaths—fatalities due to wind or storm surges—outnumbered the number of indirect deaths, fatalities caused by things like downed power lines or people driving in a flood. But in 2000, those numbers reversed, and now there are more indirect fatalities. In other words, many are dying because they are unaware of how dangerous the situation actually is. [Beatty et al.] says it also could be

the ‘ostrich effect’—a term referring to those who avert attention from damaging but important information, like an ostrich sticking its head in the sand. And of course, he says, it could be optimism bias, where a person thinks they are at less risk for experiencing a negative event compared to others—the ‘but that would never happen to me’ mentality. (Shrikant, 2018)

As with smokers, who know cigarettes are bad for them yet continue smoking, those who do not prepare for a hurricane or similar event may have seen hurricane damage on the news or read about preparedness, but do not think the same will happen to them. This optimism bias plays a large role in decision-making surrounding infrequent or unlikely events, such as a hurricane or earthquake. However, the socioeconomic differences between those who prepare and those who do not may indicate that messaging—rather than mindset—is a larger factor in complacency (Shrikant, 2018). Further, the research shows that “those who bought supplies before landfall tended to be higher-income, more educated, and whiter. Those who bought after tended to be less educated, lower-income minorities who are ‘less likely to receive, trust and respond to risk information’” (Shrikant, 2018).

Hurricane Michael’s devastation to Panama City and the greater Florida Panhandle had impacts long after the storm passed. Panama City has struggled to rebuild itself since the hurricane landfall in October 2018. Local governments were forced to raise property taxes to pay for recovery costs due to the devastation to local housing and a sharp drop in population from people leaving the area. Among the city’s structures, 85% were damaged, reducing their tax value drastically. Damaged buildings and homes are being repaired and destroyed buildings and homes are, in some cases, being rebuilt. However, there are not enough contractors and trade workers in the area to meet the demand. To compound the issue, Hurricane Michael exposed

problems with Panama City's aging infrastructure (Allen, 2019). According to Allen, the city's infrastructure had shown signs of its age since 2019, when "a series of breaks and pump failures ... dumped more than 65,000 gallons of sewage into the city's waterways" (Allen, 2019).

Uprooted trees and heavy trucks hauling debris caused subgrade sewer pipes to crack; replacing these will take a decade and cost over \$200 million. As the area is rebuilt, property tax rates will come back down, which may draw former residents back to their hometown. Panama City lost more than 25% of its residents after the storm (Allen, 2019).

Conclusion. Hurricane Michael was the strongest storm to strike the Florida Panhandle in recorded history, bringing with it devastating winds and a massive storm surge that destroyed much of Panama City and the surrounding area. Some people left the area before the storm, and those who remained were divided between those who prepared and those who did not. Research shows that there are many reasons for those in hurricane areas to fail to prepare, the most likely cause of which is an optimism bias. There is also evidence that messaging about preparedness only reaches those of a higher socioeconomic class, leaving minorities and poorer individuals in the dark on the need to prepare.

COVID-19 Pandemic, Kirkland, Washington (2020)

The third case study is the 2020 outbreak of COVID-19, which occurred in Kirkland, Washington, beginning on February 29, 2020. The city of Kirkland experienced the first U.S. outbreak of COVID-19, a coronavirus pandemic that began spreading around the world from its origin in China in late 2019. The Kirkland outbreak started at the Life Care assisted living community, which is a skilled nursing facility caring for elderly patients (Whitaker, 2020). McMichael et al. state that the outbreak eventually "resulted in cases among 81 residents, 34 staff members, and 14 visitors; 23 persons died" (McMichael et al., 2020). Early in the COVID-

19 pandemic, limited effective infection control and prevention measures contributed to rapid virus spread in hot-spots around the world (McMichael et al., 2020). This case study focuses on the first U.S. outbreak of COVID-19 in Kirkland.

Synopsis. In late 2019, the COVID-19 virus began spreading globally from its origin in China. COVID-19 was caused by a new variant of the coronavirus. At the virus's onset, epidemiologists noted that it appeared highly transmissible, but that the death rate and many other aspects of the virus were unknown. In the United States, there were concerns about when and where COVID-19 would enter the country (City of Kirkland, 2020, p. i). On January 21, 2020, the CDC confirmed the first U.S. case of COVID-19 in Washington State, which was an isolated infection that did not spread (MyNorthwest, 2020). However, COVID-19 did not remain isolated for long. According to the City of Kirkland, by late February 2020, "first responders and health officials detected what appeared to be an outbreak of flu-like symptoms in a number of patients living in a long-term care facility in Kirkland, Washington" (City of Kirkland, 2020, p. i). The patients were taken to nearby Evergreen Hospital, also in Kirkland, where several were determined to be positive for COVID-19 and one patient died. No U.S. city was prepared for a pandemic outbreak at that time, and the information about COVID-19 was severely lacking early in its spread. This left the city of Kirkland, like many others, guessing on what to do to respond to this major public health emergency (City of Kirkland, 2020, p. i).

When the COVID-19 outbreak began in Kirkland, testing for the virus was limited only to the CDC's Atlanta, Georgia laboratory. This limitation meant testing was limited to only those who had likely been exposed to the virus by traveling to or from China or being in contact with someone who had qualified for testing. None of the Kirkland patients in this initial outbreak met these criteria. Kirkland turned to the University of Washington Medical Center in Seattle for a

locally produced COVID-19 test to determine the extent of the outbreak. While this was in the works, the CDC began sending COVID-19 tests to public health labs around the country, but many of these tests were defective, producing false-positive results (Whitaker, 2020). Whitaker reports that one Kirkland-area hospital worker said about the initial outbreak, “It came down to a guessing game of who they thought had COVID-19 and who didn’t, isolating some and not others. No one in [the United States] had come up against anything like this before” (Whitaker, 2020). Staff and Life Care and Evergreen Hospital in Kirkland ran short of personal protective equipment (PPE) and were forced to improvise with whatever they could acquire. Hospital staff began getting sick and could no longer work. The issues with the outbreak began to compound one upon another, creating an untenable situation for Kirkland and the surrounding areas (Whitaker, 2020).

At the outset of the Kirkland outbreak on February 29, 2020, Washington’s Governor Inslee declared a state of emergency and directed state agencies to put all available resources toward preparing for and responding to COVID-19 (Office of the Governor of WA, 2020). In a report from the Office of the Governor, Inslee stated, “This will allow us to get the resources we need. This is a time to take commonsense, proactive measures to ensure the health and safety of those who live in Washington state” (Office of the Governor of WA, 2020). Even at the outset of the Kirkland outbreak, Inslee’s statement warned that COVID-19 could likely be a worldwide pandemic. The emergency proclamation called for the activation of the SEOC to its highest level and allowed for the use of the National Guard in responding to the public health emergency (Office of the Governor of WA, 2020). The death of the Life Care patient taken to Evergreen Hospital on March 1, 2020, was the first U.S. COVID-19 death. By March 3, the virus spread from Washington to North Carolina, spread by an individual who was exposed to the virus at

Life Care in Kirkland. COVID-19 spread rapidly within Washington and through the United States, resulting in Governor Inslee issuing a two week “stay at home” order on March 24, similar to actions taken throughout the country. This order was extended to May 4, followed by a statewide social distancing and mask mandate that lasted for many months (MyNorthwest, 2020).

Findings. The city of Kirkland experienced the first outbreak of COVID-19 in the United States during the global coronavirus pandemic in 2020. The outbreak began at the Life Care assisted living facility and spread to Evergreen Hospital when Life Care patients were taken there to avoid further spread among Life Care’s elderly patients (McMichael et al., 2020). McMichael reports that early on it became apparent that “COVID-19 can spread rapidly in long-term residential care facilities, and persons with chronic underlying medical conditions are at greater risk for COVID-19-associated severe disease and death” (McMichael et al., 2020). The Life Care outbreak began with a cluster of respiratory illnesses, all of which tested negative for influenza. Patients experienced fever, cough, and shortness of breath, all symptoms consistent with both influenza and COVID-19. Once the patients were evacuated to Evergreen Hospital and determined to be positive COVID-19 cases, the CDC began investigating the outbreak. This investigation continued as the outbreak spread in Washington and elsewhere in the United States (McMichael et al., 2020). By March 9, 2020, McMichael et al. states there was “a total of 129 COVID-19 cases [...] confirmed among facility residents (81 of approximately 130), staff members, including health care personnel (34), and visitors (14)” (McMichael et al., 2020). The median age of these cases was 81 years old for Life Care patients, 42 years old for staff members, and 62 years old for visitors (McMichael et al., 2020).

Upon notification of the outbreak, the city of Kirkland activated its emergency operations center and issued a citywide emergency proclamation. These early decisions facilitated a coordinated response within the city and elevated the situation to the county and state level for support and resources. The COVID-19 pandemic quickly became politically polarizing, so Kirkland chose to remain politically neutral in its response, instead relying on evidence and recommendations from the scientific and medical communities. Based on these recommendations, the city implemented the use of PPE, social distancing, and remote work to control the virus's spread (City of Kirkland, 2020, pp. i–ii). The City of Kirkland reports its initial priorities for the response were: “support the ongoing good health of community members and City employees [and] continue delivery of City services” (City of Kirkland, 2020, p. ii). Initial responses were undertaken by police, fire, and emergency medical personnel wearing standard PPE. However, it soon became apparent that standard PPE was not sufficient to prevent infection. Many first responders had to be isolated or quarantined after exposure, resulting in a massive shortfall in response personnel availability in the heat of the outbreak's spread. The city changed its policy for first responders to wear enhanced PPE when responding to potential COVID-19 cases. This was one of the issues faced by Kirkland as the first outbreak in the United States. There were no previous outbreaks upon which to base response protocols, so city officials and first responders were writing the playbook as they responded (City of Kirkland, 2020, p. ii).

Part of the response included determining where and how quickly the virus was spreading through Kirkland and other cities within King County. All King County long-term care facilities were contacted to determine if there were likely COVID-19 exposures or cases present (McMichael et al., 2020). McMichael et al. state that, using the information gathered from these contacts, “long-term care facilities were prioritized by risk for COVID-19 introduction and

spread, and highest priority facilities were visited by response personnel for provision of emergency on-site testing and infection control assessment, support, and training” (McMichael et al., 2020). By March 9, county officials determined there were eight other facilities with one or more confirmed cases of COVID-19, in addition to the outbreak at Life Care in Kirkland. The county began developing a profile of likely factors contributing to the vulnerability of these long-term care facilities (McMichael et al., 2020).

By March 18, Life Care was tied to 129 COVID-19 cases, which resulted in 37 deaths from COVID-19. In spite of these statistics and the challenges involved in being the first to respond to the COVID-19 pandemic, some medical experts applauded Kirkland’s handling of the outbreak (Walters, 2020). According to Walters, a Kirkland-area medical professional stated, “Those people who died in Kirkland actually helped save a lot of lives. [...] we put into place isolation, social distancing, quarantining, and attempted to do contact [*sic*] tracing earlier than the rest of the country” (Walters, 2020). Hospitals in King County inventoried their PPE supplies, ordered more, and began reviewing their procedures in light of COVID-19’s high transmission rate. In most cases, elective procedures and routine appointments were canceled, reserving all hospital resources for emergencies and necessary procedures and appointments. Some would establish systems where procedures would be canceled or kept based on the PPE supply available at the time. Though many criticized the overall U.S. response as slow and ineffective, Washington’s early and far-reaching response has been widely praised (Walters, 2020).

There were, of course, some barriers to an effective response, especially at Life Care in Kirkland. Because it was the first outbreak in the United States, and because of the outbreak’s severity, Life Care began to be investigated by the federal government to determine if the facility

had been negligent or in some way at fault for the outbreak. Investigators' demands diverted staff from caring for patients to compiling documents for the investigation. The investigation resulted in a 48-page report, or "statement of deficiencies," which blamed Life Care for failing to manage the outbreak and putting its patients at increased risk. Life Care received a fine in excess of \$600,000 from the federal government. The state jumped on board as well, conducting its own investigation and reaching many of the same conclusions (Whitaker, 2020).

Meanwhile, the city of Kirkland settled in for the long haul of managing a global pandemic. The city's authorities began to communicate routinely with the public through press releases, social media, and the city's website. They compiled a list of actions that residents could take to protect themselves and their neighbors from the risk of COVID-19 infection. Recommendations included washing hands more frequently, avoiding touching one's face (eyes, nose, or mouth), and covering one's mouth and nose when coughing or sneezing. The city also requested that residents remain home when sick, avoid contact with people who are sick, and had a plan to care for sick family members or children. Further, residents were advised to prepare for isolation and quarantine at home by having plenty of supplies at home, thus avoiding the need to leave home if sick or exposed to the virus (City of Kirkland, 2020).

Discussion. The first case of COVID-19 in the United States was in Snohomish County, Washington, just to the north of Kirkland. This first case was confirmed about three weeks after the initial outbreak report in China. It took only 42 days from the first case to reach one hundred cases in the United States. From then, the rate of infection increased drastically. By the end of March 2020, the United States had recorded over 140,000 confirmed cases of COVID-19 (Brahma et al., 2020). With the first outbreak of the virus within the United States, Kirkland faced a steep learning curve in responding to the virus and controlling its transmission. Despite

these challenges early in the response effort, Kirkland was remarkably successful in maintaining its priorities and achieving its objectives for the response (City of Kirkland, 2020, p. ii). In their after-action report, The City of Kirkland noted that “very few employees were infected with the virus; the disease was contained within the workforce; no employees were laid off; and residents and businesses were able to rely on the ongoing provision of core City functions” (City of Kirkland, 2020, p. ii).

There are three factors identified that enabled Kirkland to be successful in its response to the initial outbreak. First, the city was in a strong financial and managerial position prior to the pandemic outbreak. It had substantial funds reserved for emergency situations, which had accumulated over several years. The city manager and city council worked well together, each fulfilling their respective roles while avoiding getting in one another’s way (City of Kirkland, 2020, p. iii). Second, according to the City of Kirkland’s report, “the City’s leadership had committed, in advance, time and resources to disaster planning, training, and disaster exercises, which informed City staff of their responsibilities in this emergency situation” (City of Kirkland, 2020, p. iii). Third, the early decision by city authorities to activate its emergency operations center improved coordination, information sharing, and decision-making in the critical early days of the outbreak. City officials also communicated actively with city employees, sharing information and conveying policy changes in response to the virus. The city manager especially sent detailed messages to all city employees on a regular basis (City of Kirkland, 2020, p. iii). The City of Kirkland asserts that, though time-consuming and primarily accomplished late at night, these messages “provided a continuity of thinking that reflected a sense of care for the employees while encouraging them to continue to serve the community” (City of Kirkland, 2020, p. iii).

While the city of Kirkland continued to manage its expanding response effort, the virus was spreading around the state and country. Outbreaks were especially impactful in long-term care facilities, which housed some of the most medically vulnerable of the population. Not long into the pandemic response, local and state authorities in Washington implemented standardized preventive measures for all such facilities (McMichael et al., 2020). Implementing these measures required active coordination with state health agencies, county governments, and local authorities. It also required the cooperation of private medical facilities, hospitals, and long-term care facilities across the state. However challenging, these measures were critical to stopping the virus from running rampant through the state's elderly population. Hand-in-hand with these measures was an active public messaging strategy to inform the public of the nature of the pandemic and the measures that must be taken to protect the public from infection (McMichael et al., 2020).

Conclusion. The city of Kirkland responded to the first COVID-19 outbreak in the United States beginning in late February 2020. The city made decisions early to activate emergency functions and implement protective measures to keep first responders, city employees, and the public at large safe from the virus while still providing needed services to residents. The Life Care center suffered the worst of the initial outbreak, with hundreds of patients, staff, and visitors becoming infected, many of whom died. While authorities and residents were generally not prepared for a disaster like this, they were able to effectively adjust their policies and procedures and implement protective measures rapidly enough to slow the spread of the virus and allow it to dissipate naturally (City of Kirkland, 2020, p. v).

Results

Theme Development

The results of the policy, survey, and case study analyses presented in this chapter have been analyzed and reviewed to develop themes. The identified themes are used to answer each of the research questions for this study. The themes are preparedness beliefs, preparedness knowledge, preparedness behaviors, and preparedness actions. All themes are the result of repeated words and descriptions observed during data collection. The number of times words and descriptions are repeated add strength to the themes. These themes are also used in the survey analysis to categorize the survey responses in a meaningful way.

Analysis began using four broad categories: preparedness policy, behavioral psychology, case studies, and successes and failures. These categories gave rise to the identified themes during the coding process. The themes are also based on VIT, identifying attitude-objects and attitude-behaviors, and on the results of the surveys, especially where there are common substantive questions between several surveys that can be directly compared. As displaying and reducing data proceeded, the themes became clearer. Using VIT and the results of this analysis, the data was distilled into two categories. Knowledge and beliefs are tied to attitude-objects, and behaviors and actions are tied to attitude-behaviors. From these categories, four themes arose. Preparedness knowledge is attitude-objects reflecting things individuals know to be true based on evidence. Preparedness beliefs are attitude-objects reflecting things individuals know to be true based on feelings or experience. Preparedness behaviors are attitude-behaviors based on the way a person lives in relation to preparedness. Preparedness actions are attitude-behaviors based on the things a person does in relation to preparedness.

Theme 1: Preparedness Beliefs. Theme one emerged primarily from the survey analysis and includes attitude-objects associated with perceived risk, perceived barriers to preparedness, and perceptions that preparedness does or does not help (i.e., efficacy). This theme is supported by results from the case studies.

Preparedness beliefs are a strong driver of preparedness behaviors and actions. This is supported by the results of the preparedness surveys. Ninety-eight percent of survey respondents in 2018, 2019, and 2020 indicate their perception of risk for disasters is a key disaster preparedness influencer, compared to 89.8% in 2022. Between 2011 and 2016, survey respondents indicate they are concerned about terror attacks (72% to 83%) and natural disasters (42% to 46%) affecting themselves or their communities. These results indicate that there is a moderate to high level of perceived risk among Americans, and that the higher the perceived risk, the more likely individuals are to engage in preparedness behaviors and actions. One quarter of the respondents to the 2014 survey indicate that they either do not know how to get prepared or think preparing is too expensive. These barriers to preparedness carry through to the 2018, 2019, and 2020 survey responses. In these surveys, two thirds of respondents report having some money set aside for an emergency, which includes more than just disaster event emergencies. However, around half of respondents to the same surveys have either nothing set aside or do not know how much they have set aside for an emergency. Similar responses are seen in 2022, where 56.4% had set aside money compared to 43.6% who had little, or no money set aside for emergencies. The responses for preparedness efficacy are relatively consistent across the surveys from 2014 to 2022. The 2014 survey responses show that between 47% and 74% of respondents believe preparedness helps, though the higher response rates depend on the specific threat the respondents face (i.e., flood, wildfire, hurricane, etc.). The responses between 2017 and 2020 are

between 42% and 47%, with a jump to 94.5% in 2022. For preparedness beliefs, it is evident that half to three quarters of the respondents are concerned about a disaster event occurring and that two thirds have some money set aside for an emergency. Also, on average, around half of the respondents believe preparedness helps, though one quarter see barriers to preparedness.

Theme one is also supported by both the Colorado case study and the Florida case study. The preparedness beliefs associated with perceived risk and preparedness efficacy appear in these case studies in many ways. In Colorado, residents understood they lived in an area that was vulnerable to flash flooding (Castellani, 2017), as the area had experienced one of the worst floods on record in 1976, which claimed 144 lives (Uccellini, 2014, p. 1). The flood risk was heightened because of wildfires in the area in the years leading up to the 2013 floods, a fact that was communicated to the public by Boulder County authorities prior to the flood (Uccellini, 2014, p. 28). These facts likely heightened the risk perception of residents, which may have increased the likelihood of preparedness behaviors among the population prior to the flood. However, the limited ability of weather services to forecast the magnitude of the coming storm may have decreased risk perception in the days before the flood. Before the storm, the Boulder County area experienced unseasonably high temperatures (Water Damage Defense, n.d.). Despite this, forecasts predicted heavier than normal rainfall in the area (Uccellini, 2014, p. 1). The nature of the storm system made it difficult to predict accurately, but the NWS still forecast heavy rains and issued multiple flash flood warnings in the days before the storm hit (Uccellini, 2014, p. 2). These forecasts should have increased the risk perception for residents prior to the storm beginning in earnest, giving them time for last-minute preparations if needed.

Similar evidence is found in the Florida case study. The majority of Florida residents were aware—or should have been—that there was always a risk of hurricanes or similar storms,

which should have heightened the perception of risk. Leading up to Hurricane Michael's landfall, Florida authorities made concerted efforts to inform the public of the storm's growth, magnitude, and likely path, which could give residents time either to evacuate or to make last-minute storm preparations (Florida SERT, 2019, p. 17). Three days before landfall, the state issued an emergency declaration and began evacuations across the Florida Panhandle (Florida SERT, 2019, p. 11). Routine warnings to the public came in the days leading up to the landfall as Hurricane Michael increased in magnitude from a tropical depression to a Category 5 Hurricane (Martin, 2018, pp. 6–9). The fact that there were only seven deaths from the storm, with 43 additional deaths after the storm, for the strongest storm ever to strike the Panhandle region is a testament to the preparedness of the population based on their perception of risk (NWS, n.d.).

The Florida case study also supports the preparedness efficacy component of preparedness beliefs in theme one. A 2018 study on emergency supply purchases before and after hurricanes showed that some people believe preparedness helps and others do not. This study showed that emergency supply purchases actually increased after a storm, which indicated that many people do not prepare for a storm until after it happens—this is reaction rather than preparedness. There was also an increase in the number of deaths after a hurricane since 2000, which suggested that people do not take the risk of hurricanes seriously (Shrikant, 2018). This speaks both to these residents' perceptions of hurricane risk and their preparedness efficacy.

Theme 2: Preparedness Knowledge. Theme two emerged from the policy evaluation and survey analysis, with some limited support from the case studies. This theme includes attitude-objects associated with knowledge of local preparedness plans and systems, knowledge about preparedness through receipt of preparedness information, and past experience with disaster events.

Homeland security policy places a heavy emphasis on the importance of informing and educating the public about preparedness. The Ready Campaign is used by FEMA and DHS as their primary vehicle for delivering preparedness information to Americans (Office of the Press Secretary, 2007, pp. 1–2). The Ready Campaign emphasizes the importance of creating a household preparedness plan and gathering emergency supplies to last 72 hours. As of 2012, nearly 4 million individuals accessed the Ready Campaign via its website and telephone number to obtain preparedness information (DHS, 2012, pp. 26–27). However, the GAO identified flaws in the Ready Campaign. The Federal Emergency Management Agency is unable to control Ready Campaign information distribution or accurately measure whether the Ready Campaign is impacting preparedness behaviors of Americans (Jenkins, 2010). Surveys by FEMA indicate that a very small percentage of Americans were fully prepared for a disaster event, with just under half of survey respondents indicating they had not prepared at all. The reality is likely worse, as people tend to be more positive in responding to surveys than things really are (FEMA, 2019, p. 6). Despite these shortfalls, FEMA has continued with the Ready Campaign for almost 20 years without much modification (FEMA, 2019, p. 7).

There is also support in homeland security policy for individuals to be aware of local plans and systems, especially preparedness policies for schools. Parents and students need to be aware of the plans and policies of their local schools so they understand what the schools will do with children in the event of a disaster or emergency. However, policy documents tend to focus more on school violence prevention and response rather than disaster events overall (DHS, 2019, p. 19).

Preparedness knowledge can be tied directly to preparedness behaviors and actions. Those who know better tend to do better, as the saying goes. This is reflected in the survey

responses related to preparedness knowledge. An individual's knowledge of the preparedness plans and systems in their local area provides them with needed information for their own preparedness activities. Survey responses show that between 43% and 61% of respondents are aware of their local plans and systems, which include preparedness plans, response plans, and alert and warning systems. However, only 35% to 44% of respondents think that the local plans and systems are adequate to address potential disaster events. There is a major effort at the federal level to educate and inform the public on the need to prepare. In spite of that decades-long effort, the survey responses indicate that only between 40% and 65% of respondents have received preparedness information from any source. Also, the response rate was 63% in 2013, went down to 40% in 2017, increased to 47% in 2020, and finally rose to 65.7% in 2022. This shows that the federal efforts, especially the Ready Campaign, have been generally ineffective in informing the public about preparedness. Disaster experience is a source of both preparedness information and knowledge of local plans and systems. The surveys indicate that between 43% and 58% of respondents have either direct or familial experience with disasters. One third to one half of respondents know about their local plans and systems, have received preparedness information, and have experience with disasters.

There is additional support for theme two in the Washington case study, specifically surrounding informing the public. The city of Kirkland communicated routinely with the public through the initial weeks of the COVID-19 pandemic using press releases, social media, and the city website. The city provided information to the public on what individuals and families could do to prevent infection and to prepare for the possibility of isolation and quarantine impacts on their family and work life (City of Kirkland, 2020). The county and state also engaged in public

information messaging associated with the Kirkland outbreak and the expanding nature of the pandemic (McMichael et al., 2020).

Theme 3: Preparedness Behaviors. Theme three emerged from the survey analysis with support from the policy evaluation and case studies. It includes attitude-behaviors, such as developing a household emergency plan, talking with others about preparedness, and the stages of preparedness behavior. These behaviors are not so much concrete actions as they are ways of living that weave preparedness into one's life.

The most consistently surveyed preparedness behavior is a household emergency plan. This is also one of the most frequently publicized steps for individual preparedness by the federal government. Among all 11 evaluated surveys, 39% to 61% of respondents indicate that they have at least a basic household emergency plan. This means that potentially just over half of Americans have an emergency plan, which is lower than would be expected based on the decades-long preparedness education effort by the federal government. For the second preparedness behavior, talking with others about preparedness, the survey results show a consistent increase from 2013 to 2022. The rate increased from 31% in 2013 to 71.6% in 2022, indicating that over time more individuals were talking with others about preparedness. Talking with others is an indicator that preparedness is becoming a more ingrained part of a person's life and identity. FEMA identifies five stages of preparedness that describe where an individual is in their level of preparedness. These stages are defined as follows: Stage 1: Precontemplation; Stage 2: Contemplation; Stage 3: Preparation; Stage 4: Action; and Stage 5: Maintenance.

For this analysis, it is appropriate to divide these five stages into two categories; prepared or not prepared. Prepared includes stages four and five, not prepared includes stages one, two, and three. In the 2014 survey, 49% of respondents are not prepared compared to 49% who are

prepared. In 2017, 57% are not prepared compared to 42% who are prepared. In 2018, 47% are not prepared compared to 52% who are prepared. In 2019, 41% are not prepared compared to 59% who are prepared. In 2020, 49% are not prepared compared to 51% who are prepared. In 2022, 40.9% are not prepared compared to 59.1% who are prepared. The data shows that there is a fairly consistent 50% split between prepared and not prepared among survey respondents.

Homeland security policy emphasizes, among other things, the importance of having a household emergency plan to address possible disaster events. This is listed as one of the two most basic steps in disaster preparedness for individuals and families (Pittenger, n.d., p. 23). FEMA states that a household emergency plan is the first preparedness responsibility at the individual level. Emergency plans include what the family will do in the event of a disaster, with everything from gathering together to evacuation (DHS, 2016, p. 11).

There is further support for theme three in the Colorado and Florida case studies. In Colorado, the case study identifies two different preparedness behaviors, with urban residents reliant on the government during a disaster and rural residents reliant on themselves and their neighbors during a disaster. These two behavior sets translate to the degree to which individuals make plans for disasters and discuss preparedness with others. These two behaviors are more prevalent among the rural communities than the urban communities (MacClune et al., 2014, p. 35). In the Florida case study, household plans and discussing preparedness with others are prevalent in coastal communities that experience storms relatively routinely. Many residents plan to evacuate the area before a storm, returning later to recover. Others choose to stay and fortify their homes to weather the storm (Shrikant, 2018). Many household plans allow for both evacuating and remaining, depending on the storm's path, magnitude, and recommendations

from local authorities. There is rarely much time available to make a decision to evacuate or not, so plans need to be flexible to respond to the changing nature of a storm (Martin, 2018).

Theme 4: Preparedness Actions. Theme four includes attitude-behaviors, such as gathering emergency supplies, participating in preparedness training or drills, and purchasing hazard insurance. These behaviors are concrete actions individuals take to prepare for disaster events. This theme emerged in the survey analysis with support from the policy evaluation and, to a small degree, from the case studies.

Preparedness actions are things people do to prepare for disasters, which are more tangible than just having a plan or talking to people about preparedness. Chief among these is gathering emergency supplies. In the 2012 survey, 83% of respondents report having emergency supplies. The number dips down to 52% in 2013 and 2014, but then steadily increases back up to 81% in 2020 with emergency supplies; the response rate dips again to 75% in 2022. Another preparedness action is attending preparedness training or drills. The data for this item shows an interesting trend. Over time, the percentage of respondents attending preparedness training goes down (from 46% in 2014 to 29% in 2020) while the percentage of respondents participating in preparedness drills goes up (from 39% in 2014 to 56% in 2020). Overall participation in both training and drills combined is 35.2% in 2022. Another important preparedness action is purchasing hazard insurance, which is represented by flood insurance in all the examined surveys. Unfortunately, only 20% to 23% of respondents between 2014 and 2020 have purchased flood insurance, which is the smallest percentage reported for preparedness across the entire survey analysis. Interestingly, this number leaps from 23% in 2020 to 56.8% in 2022, which may be an anomaly due to the small sample size of the 2022 survey.

Homeland security policy places a great deal of emphasis on gathering emergency supplies. Most often, individuals are asked to have enough supplies on hand to survive for 72 hours—three days—following a disaster. This is meant to allow first responders time to respond to life-or-death situations immediately after a disaster before people need help. Emergency supplies include water, food, medication, and comfort items for all family members, including animals (Pittenger, n.d., p. 23; Jenkins, 2010, p. 1). Despite FEMA pushing preparedness for close to two decades, the majority of Americans still expect to rely on the government to rescue them following a disaster, meaning that most individuals do not have emergency supplies to sustain themselves (Jenkins, 2010, pp. 1–2). However, it is clear in many policy documents that emergency supplies, in addition to household emergency plans, are very important for individuals to ensure their survival, especially in the event of a catastrophic disaster. By preparing, individuals reduce their needs for assistance after a disaster and increase the overall capacity of first responders to help the community (DHS, 2016, p. 11; DHS, 2019, p. 27).

Individuals can also participate in training and drills within their community to improve both their own level of preparedness and that of their community. The Federal Emergency Management Agency sponsors and manages the CCP, which trains people to be disaster response volunteers through programs like CERT (Office of the Press Secretary, 2007, p. 2; DHS, 2012, p. 26). Training and drill participation allows an individual not only to better prepare themselves and their families for disasters—thus reducing their need for assistance—but also makes them a potential disaster volunteer, which increases the capacity of the government response. They can help themselves, their neighbors, and their community (DHS, 2019, pp. 27–28).

Theme four has additional support from the Colorado and Florida case studies. In Colorado, many people take steps to mitigate flood impacts before the flood occurs.

Homeowners prepare their homes by building berms and swales to direct water away from the home. They dig culverts to allow water to pass underground, and they install sump pumps to remove water from basements and crawl spaces. There are problems with these preparations, such as a failure to maintain them over time and in some cases directing water away from one property onto another, but overall, the preparations are beneficial actions taken by individuals to prepare for a likely disaster event (MacClune et al., 2014, p. 19).

In Florida, there was less than 48 hours' notice before Hurricane Michael struck as a high category storm, as it increased in strength very rapidly. Those who did not evacuate rushed to hardware and grocery stores to purchase emergency supplies and supplies to toughen their homes against the coming storm. Local stores prepared with additional emergency supply stocks, so the supplies were available to those who chose to purchase them (Shrikant, 2018).

Research Question Responses

The research questions are linked to different components of this study, especially the policy evaluation and survey analysis. The four themes identified in the previous section support the analysis of this research using VIT. Findings from this study have been compiled and associated with each research question to provide answers to each of the questions. The following sections provide detailed answers to each of the research questions.

Main Research Question. What are the factors that influence Americans' willingness and ability to prepare for disasters?

Attitude is a major component of VIT. This includes attitudes, attitude-objects, and attitude-behaviors. To determine vested interests, individual attitudes and their associated components must be understood in detail (Petty & Krosnick, 1995). Vested interest theory can help in predicting attitude-behavior related to the type and degree of participation in national

elections. The theory suggests that people act consistently on issues of high personal interest.

Examination of this theory using three different analysis areas suggests that VIT is a strong predictor of attitude consistency regarding behavior in elections (Lehman & Crano, 2001).

Vested interest theory can also help with issues related to risk communication and preparedness for disasters. A 2014 study assesses differences between the inhabitants of two high-risk flood areas in Italy based on experience, risk perceptions, concerns, attitudes, and behavioral intentions. The findings indicate that high-risk area residents report more experience and a more significant perception of risk and concern, though no discernable differences are found in actual preparedness behaviors (De Dominics et al., 2014).

Preparedness attitude-behaviors are divided into two themes, which are preparedness behaviors and preparedness actions. The most prevalent preparedness behavior is having a household emergency plan, to which 48% of survey respondents in 2020 respond positively. This response rate is higher in hurricane areas (67%), tornado areas (61%), earthquake areas (53%), and wildfire areas (52%), but lower in flood areas (39%) and urban event areas (39%). The positive response rate for having a household emergency plan increased to 61.9% in 2022. The next most prevalent preparedness behavior is talking with others about preparedness; 48% of 2020 survey respondents report having done so. As with the household plan, the rate of talking with others about preparedness is higher in hurricane areas (63%), wildfire areas (60%), tornado areas (56%), and earthquake areas (54%), but lower in urban event areas (44%) and flood areas (43%). Again, this response rate increases in the 2022 survey to 71.6%. The least prevalent preparedness behavior is represented by the five stages of preparedness, wherein only 36% of 2020 survey respondents report that they are in Stage 5 (maintenance), which means they

consider themselves fully prepared for a disaster; this number increases slightly in 2022 to 38.7% of respondents in Stage 5 (maintenance).

For preparedness actions, the most prevalent is gathering emergency supplies. In the 2020 survey, 81% of respondents indicate they have emergency supplies for three or more days, while 75% report the same in the 2022 survey. This rate is higher in wildfire areas (86%), tornado areas (84%), earthquake areas (83%), and hurricane areas (82%), but lower in flood areas (79%) and urban event areas (75%). The next most prevalent preparedness action is participation in an emergency drill, to which 56% respond “yes” to the 2020 survey. The rate of participation is higher in wildfire areas (64%), earthquake areas (63%), tornado areas (59%), and hurricane areas (57%), but lower in flood areas (53%) and urban event areas (50%). The third most prevalent preparedness action is attending a meeting or training on preparedness, which goes hand-in-hand with participating in a preparedness drill. Twenty-nine percent of the 2020 survey respondents indicate they have attended a meeting or training, which is higher in wildfire areas (35%), hurricane areas (34%), earthquake areas (33%), and tornado areas (31%), but lower in flood areas (27%) and urban event areas (24%). The 2022 survey combined responses for participation in drills or training is 35.2%, which is an average between these two metrics in the 2020 survey. The least prevalent preparedness action is purchasing hazard insurance. In the 2020 survey, 77% of respondents report having homeowner’s or renter’s insurance, but only 22% report having flood insurance, which is an example of hazard insurance. Fifty-six percent of respondents to the 2022 survey indicate they have both homeowner’s or renter’s insurance and hazard-specific insurance, such as flood insurance.

As stated, attitudes, attitude-objects, and attitude-behaviors are major components of VIT. To determine vested interests, individual attitudes and their associated components must be

understood in detail (Petty & Krosnick, 1995). Adame and Miller use VIT as a framework for designing and testing the effectiveness of television campaign messages related to disaster preparedness. The results of the research indicate that television public service announcements using subtle message variations could be effective in influencing attitudes about individual preparedness, especially regarding behavioral intentions and self-efficacy, which are two important variables associated with disaster preparedness (Adame & Miller, 2015).

Preparedness attitude-objects are divided into two themes, which are preparedness beliefs and preparedness knowledge. The most influential preparedness belief is risk perception. Ninety-eight percent of 2020 survey respondents and 89.8% of 2022 survey respondents report that risk perception is a key disaster preparedness influencer. The next most influential preparedness belief is barriers to preparedness. In the 2020 survey, 68% of respondents report having some money set aside for an emergency, while 46% have either nothing set aside or are unsure what they have set aside for an emergency. In 2022, 56.4% of respondents have money set aside, while 43.6% have either nothing set aside or do not know what they have set aside for an emergency. These responses indicate that socioeconomic factors may not be as strong a barrier to preparedness as is often assumed. The least influential preparedness belief was preparedness efficacy. Of the 2020 survey respondents, 47% indicate they believe preparedness helps in the event of a disaster. However, the response rate in 2022 increases dramatically to 94.5% of respondents who believe preparedness helps; this may indicate an increase in the impact of preparedness efficacy on preparedness behaviors.

For preparedness knowledge, the most influential indicator is preparedness information, though not in the way it is traditionally seen. Only 47% of 2020 survey respondents have received information on preparedness. However, 65% of respondents report having sought out

preparedness information. The rate of seeking preparedness information is higher in hurricane areas (76%), wildfire areas (74%), tornado areas (69%), and earthquake areas (66%), but lower in flood areas (63%) and urban event areas (62%). In the 2022 survey, 65.7% of respondents had either received or sought out preparedness information. The next most influential preparedness knowledge indicator is disaster experience, to which 47% of 2020 survey respondents and 58.5% of 2022 survey respondents respond positively, either from their own experience or the experience of a close friend or family member. The least most influential indicator for preparedness knowledge is knowledge of local plans and systems. Forty-seven percent of respondents to the 2020 survey indicate that they are aware of local plans and systems where they live.

In VIT, if an individual has a vested interest—or stake—in something, their personal interest in that thing shapes their behavior. Vested interests are based on attitude-objects, which are things or ideas that an individual has feelings toward or makes judgments about. The actions taken by the individual based on their vested interest in the attitude-object is their attitude-behavior. Attitude-behaviors occur in response to attitude-objects depending on the degree of vested interest in the attitude-object. Thus, vested interests can predict attitude-behaviors. This research has produced four themes. Two of these are attitude-objects—preparedness beliefs and preparedness knowledge. Two of these are attitude-behaviors—preparedness behaviors and preparedness actions. Using VIT, the degree to which an individual is personally vested in one or more of the components of preparedness beliefs or preparedness knowledge can predict their preparedness behaviors and preparedness actions.

Sub Research Question A. What effect have federal preparedness policies had on Americans' disaster preparedness level?

This research shows that federal preparedness policies have had only a minimal impact on American individuals' and families' disaster preparedness. The survey analysis shows that there are percentages of Americans—in some cases majority percentages—who are prepared in various ways for disasters. However, the federal government's primary efforts through FEMA have focused on educating and informing the public on why they need to prepare and what they need to do to prepare, and the policy evaluation showed that these efforts have fallen short of influencing preparedness behaviors among Americans.

The GAO report from 2010, *FEMA Faces Challenges Integrating Community Preparedness Programs into its Strategic Approach* (Jenkins, 2010), examines FEMA's preparedness efforts, specifically the CCP and the Ready Campaign. The GAO found that FEMA faces two primary challenges in measuring program performance. First, it relies primarily on the states to verify data for programs, and second, it is unable to effectively control its Ready Campaign messages or measure behavior change based on those messages (Jenkins, 2010). The report uses data from two national surveys to show that Americans are generally not very prepared for disasters due to two key indicators: household emergency plans and household disaster supplies. However, FEMA's own surveys illustrate several of the known problems with individual and family preparedness in America. Citizens believe preparedness is the government's responsibility rather than the individual, and that they will be rescued by first responders or the military during a disaster. The report goes on to explain FEMA's responsibility to manage the CCP, the NPS, and the Ready Campaign. Importantly, Jenkins notes that the Ready Campaign messaging "calls for individuals, families, and businesses to (1) get emergency supply kits, (2) make emergency plans, and (3) stay informed about emergencies and appropriate responses to those emergencies" (Jenkins, 2010, p. 8).

Another FEMA document, *Building Cultures of Preparedness: Report for the Emergency Management Higher Education Community* (FEMA, 2019), translates FEMA's strategic vision of building a culture of preparedness into tangible actions, in this case specific to the education community. This document is important because it represents FEMA's own recognition that its efforts to drive individuals and families to prepare for disasters have been ineffective. According to this report, the diversity of America's communities and people require an approach to building a culture of preparedness that is tailored to each community, rather than attempting a 'one-size-fits-all' solution (FEMA, 2019, p. 4). Preparedness, according to FEMA, is a local, rather than a national, matter and each local community in the United States has different needs and capabilities. The Federal Emergency Management Agency notes that despite a decade of effort by FEMA and DHS, "attempts to enhance levels of preparedness among individual households, communities, and various organizations which lie outside the emergency management profession's immediate sphere of control have shown little to no sign of improvement" (FEMA, 2019, p. 6). Even the Ready Campaign, FEMA's flagship preparedness public relations campaign, has not produced the desired results. Surveys indicate that a very small percentage of Americans are fully prepared for a disaster event, with just under half of survey respondents indicating they have not prepared at all. Additionally, FEMA states in this report that surveys tend to produce biased results because respondents tend to answer too optimistically and avoid admitting shortcomings (FEMA, 2019, p. 6). In spite of this admission, FEMA has continued to pursue the same methods of informing the public on preparedness. Perhaps the most damaging finding in this report, which contributed to the research for this dissertation, is as follows:

FEMA's own research on preparedness, such as the results from the 2009 Citizen Corps National Survey, have long shown that public outreach campaigns and education efforts

were having no effect on preparedness levels. ... These research findings have caused the organizations mounting these campaigns to reflect on the effectiveness of their messaging and question how individual preparedness should be measured. ... But despite an increasing accumulation of lessons learned and research demonstrating that key policy efforts aimed at individual preparedness have failed to provoke changes in preparedness behavior, virtually identical campaigns continue unabated. (FEMA, 2019, p. 7)

Sub Research Question B. What phenomena can explain a lack of preparedness among Americans?

This research shows that the factors influencing preparedness behaviors among American individuals and families are preparedness beliefs and preparedness knowledge. This conclusion is supported by the survey analysis discussed earlier in this chapter. Preparedness beliefs include perceptions of risk, perceptions of barriers to preparedness, and beliefs that preparedness helps (also called preparedness efficacy). The survey responses indicate that as many as 98% of respondents believe that perception of risk is a key influencer of disaster preparedness; this is among the highest positive responses among all the surveys analyzed. Around half of the survey respondents indicate that there were financial or knowledge barriers to preparedness, though two thirds of respondents had money set aside for an emergency. Also, close to half of the respondents believe that preparedness helps in the event of a disaster.

Preparedness knowledge includes knowledge of local emergency plans and systems, receipt of preparedness information, and experience with disasters. The survey responses indicate that 47% of respondents believe that awareness of information on local plans and systems is a key influencer of disaster preparedness. 65% of respondents have sought preparedness information, primarily from FEMA's Ready Campaign, but only 47% of

respondents have received information about disaster preparedness. Also, nearly half of the respondents indicate they have either personal or familial experience with previous disaster events. Preparedness beliefs and knowledge clearly influence preparedness behaviors because these survey responses—analyzed in more detail earlier in this chapter—can be correlated with preparedness behaviors and actions.

Sub Research Question C. How does VIT explain or predict the attitude-behaviors of Americans regarding disaster preparedness?

Vested interest theory posits that if people have a personal stake, or vested interest, in the result of a policy or law, their personal interests shape their behavior, causing them to either support or rail against the policy or law depending on the nature of their self-interest (Veblen, 1919). Further, the degree to which an individual understands an event or perception as personally relevant directly impacts the relationship between attitudes and behaviors. Attitude-behavior relationships are directly tied to the degree to which an individual is personally vested (Sivacek & Crano, 1982). Vested interests, also known as attitude-objects, are a major element in fostering attitude-behavior consistency (Crano & Prislin, 1995). Attitudes acquired by individuals early in life are generalized to other issues and provide motivation for actions, even actions contrary to self-interest (Crano, 1997).

In *Vested Interest Theory and Disaster Preparedness*, Miller et al. uses both VIT and the EPPM of fear appeals to formulate a model for more effective disaster preparedness social action campaigns. This study shows that VIT and EPPM are promising models for use in shaping future campaigns for individual disaster preparedness (Miller et al., 2013). Supporting this idea, Crano, Johnson, and Siegel expand on the VIT principle that categorizes individuals as vested if the attitude-object in question directly affects the attitude holder. The authors posit that VIT can be

expanded to include circumstances where individuals indirectly affected by an issue can also be vested in the attitude-object. The applicability of VIT to public policy and legislative issues is, thus, increased (Johnson et al., 2014). Furthering this more practical application of VIT, Gordon writes that VIT can be used to analyze the elements of national power. Gordon analyzes Veblen's primary arguments regarding vested interest, intangible assets, and free income, then ties these ideas not only to national power, but to national power, specifically within an economic context (Gordon, 2014).

Summary

This chapter describes the findings of this research, displays the results of the research, and answers the research questions. The findings section provides a detailed analysis of the three main components of this study. First is survey analysis, which divides the 11 selected preparedness surveys into four categories based on the themes identified during coding. Second is policy evaluation, which analyzes presidential policy, congressional policy, and homeland security policy. Third is the case study analysis, which looks in depth at the 2013 floods in Boulder, Colorado; the 2018 Hurricane Michael in Panama City, Florida; and the initial U.S. COVID-19 outbreak in 2020 in Kirkland, Washington. Following the findings are the results, giving detailed breakdowns of each of the identified themes, which are preparedness beliefs, preparedness knowledge, preparedness behaviors, and preparedness actions. Finally, answers to each of the study's research questions are provided, using support from the findings.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this qualitative study is to understand how the failures of current preparedness policy contribute to the lack of individual and family preparedness and the political, social, and psychological factors that drive individuals and families to prepare—or not—for disasters. This study uses policy evaluation, survey analysis, and case studies to evaluate the subject of preparedness among American individuals and families. This chapter provides a summary of the findings from the study and a discussion of the theoretical and empirical findings related to the literature. This chapter is divided into five sections: a summary of findings, a discussion of findings, the implications of the findings, delimitations and limitations of the research, and recommendations for future research.

Summary of Findings

This study primarily uses secondary source data to conduct a policy evaluation of current preparedness policy at the federal level, an analysis of preparedness surveys, and a case study analysis of three selected cases: the 2013 floods in Boulder, Colorado; Hurricane Michael in Panama City, Florida in 2018; and the initial U.S. outbreak of COVID-19 in Kirkland, Washington in 2020. From these analyses, four overarching themes emerged from the data, which are (a) preparedness beliefs, (b) preparedness knowledge, (c) preparedness behaviors, and (d) preparedness actions. These themes are used to develop answers to each of the study's research questions.

The main research question is: What are the factors that influence Americans' willingness and ability to prepare for disasters? Attitude is a major component of VIT, which includes attitudes, attitude-objects, and attitude-behaviors. To determine vested interests, individual

attitudes and their associated components must be understood in detail (Petty & Krosnick, 1995). Preparedness attitude-behaviors are divided into two themes, which are preparedness behaviors and preparedness actions. The most prevalent preparedness behavior on average is having a household emergency plan, to which 61.9% (147 of 237) of survey respondents in 2022 respond positively. The next most prevalent preparedness behavior on average is talking with others about preparedness, and of the 2022 survey respondents, 71.6% (170 of 237) report having done so. The least prevalent preparedness behavior is represented by the five stages of preparedness, where only 38.7% (92 of 237) of 2022 survey respondents report that they were in Stage 5 (maintenance), which means they consider themselves fully prepared for a disaster. For preparedness actions, the most prevalent on average is gathering emergency supplies. In the 2022 survey, 75% (178 of 237) of respondents indicate that they have emergency supplies for three or more days. The next most prevalent preparedness action on average is participation in a local preparedness meeting or training event, to which 35.2% (83 of 237) respond 'yes' to the 2022 survey. The least prevalent preparedness action on average is purchasing hazard insurance. In the 2022 survey, 56.8% (135 of 237) of respondents report having homeowner's or renter's insurance and hazard-specific insurance, such as flood insurance.

Preparedness attitude-objects are divided into two themes, which are preparedness beliefs and preparedness knowledge. The most influential preparedness belief on average is risk perception. Eighty-nine percent (211 of 237) of 2022 survey respondents report that risk perception is a key disaster preparedness influencer. The next most influential preparedness belief on average is barriers to preparedness. In the 2022 survey, 56.4% (134 of 237) of respondents report having some money set aside for an emergency, while 43.6% (103 of 237) have either nothing set aside or are unsure what they have set aside for an emergency. These

responses indicate that socioeconomic factors may not be as strong a barrier to preparedness as is often assumed. The least influential preparedness belief on average is preparedness efficacy, with 94.5% (224 of 237) of 2022 survey respondents indicating that they believe preparedness helps in the event of a disaster. For preparedness knowledge, the most influential indicator on average is preparedness information, though not in the way it is traditionally seen. Sixty-five percent (154 of 237) of 2022 respondents report having received or sought out preparedness information. The next most influential preparedness knowledge indicator on average is disaster experience, to which 58.5% (139 of 237) of 2022 survey respondents respond positively, either from their own experience or the experience of a close friend or family member. The least most influential indicator for preparedness knowledge on average is knowledge of local plans and systems. Among the respondents to the 2020 survey, 47% (111 of 237) indicate they are aware of local plans and systems where they live.

In VIT, if an individual has a vested interest—or stake—in something, their personal interest in that thing shapes their behavior. Vested interests are based on attitude-objects, which are things or ideas that an individual has feelings toward or makes judgments about. The actions taken by the individual based on their vested interest in the attitude-object are their attitude-behavior. Attitude-behaviors occur in response to attitude-objects depending on the degree of vested interest in the attitude-object. Thus, vested interests can predict attitude-behaviors. This research has produced four themes. Two of these are attitude-objects—preparedness beliefs and preparedness knowledge. Two of these are attitude-behaviors—preparedness behaviors and preparedness actions. Using VIT, the degree to which an individual is personally vested in one or more of the components of preparedness beliefs or preparedness knowledge can predict their preparedness behaviors and preparedness actions.

Sub research question A is: What effect have federal preparedness policies had on Americans' disaster preparedness level? This research shows that federal preparedness policies have had only a minimal impact on American individuals' and families' disaster preparedness. It is true that the survey analysis shows there are percentages of Americans—in some cases majority percentages—who are prepared in various ways for disasters. However, the federal government's primary efforts through FEMA have focused on educating and informing the public on why they need to prepare and what they need to do to prepare, and the policy evaluation shows that these efforts have fallen short of influencing preparedness behaviors among Americans. The Ready Campaign run by FEMA has been criticized for its ineffectiveness. The GAO report from 2010 states that FEMA "is unable to control the distribution of the Ready Campaign messages or measure whether the messages are changing the behavior of individuals" (Jenkins, 2010). Further, a FEMA-produced document indicates that "attempts to enhance levels of preparedness among individual households, communities, and various organizations ... have shown little to no sign of improvement" (FEMA, 2019, p. 6). Even the Ready Campaign, FEMA's flagship preparedness public relations campaign, has not produced the desired results. In survey after survey, FEMA identifies a low level of preparedness across all demographics of Americans, but FEMA has continued pursuing its Ready Campaign (FEMA, 2019, pp. 6–7). Research by FEMA has shown that "public outreach campaigns and education efforts were having no effect on preparedness levels [but despite] demonstrating that key policy efforts aimed at individual preparedness have failed to provoke changes in preparedness behavior, virtually identical campaigns continue unabated" (FEMA, 2019, p. 7).

Sub research question B is: What phenomena can explain a lack of preparedness among Americans? This research shows that the factors influencing preparedness behaviors among

American individuals and families are preparedness beliefs and preparedness knowledge. This conclusion is supported by the survey analysis in Chapter 4. Preparedness beliefs include perceptions of risk, perceptions of barriers to preparedness, and beliefs that preparedness helps (also called preparedness efficacy). The 2022 survey responses indicate that 89.8% (213 of 237) of respondents believe that perception of risk is a key influencer of disaster preparedness; this is among the highest positive responses among all the surveys analyzed. Preparedness knowledge includes knowledge of local emergency plans and systems, receipt of preparedness information, and experience with disasters. Sixty-five percent (154 of 237) of 2022 survey respondents either received or sought preparedness information, primarily from FEMA's Ready Campaign. Preparedness beliefs and knowledge clearly influence preparedness behaviors because these survey responses can be correlated with preparedness behaviors and actions.

Sub research question C is: How does VIT explain or predict the attitude-behaviors of Americans regarding disaster preparedness? Vested interest theory posits that if people have a personal stake, or vested interest, in the result of a policy or law, their personal interests shape their behavior, causing them to either support or rail against the policy or law depending on the nature of their self-interest (Veblen, 1919). Further, the degree to which an individual understands an event or perception as personally relevant directly impacts the relationship between attitudes and behaviors. Attitude-behavior relationships are directly tied to the degree to which an individual is personally vested (Sivacek & Crano, 1982). Vested interests, also known as attitude-objects, are a major element in fostering attitude-behavior consistency (Crano & Prislín, 1995). Attitudes acquired by individuals early in life are generalized to other issues and provide motivation for actions, even actions contrary to self-interest (Crano, 1997). Vested interest theory can be expanded to include circumstances where individuals indirectly affected by

an issue can also be vested in the attitude-object, thus increasing VIT's applicability to public policy and legislative issues (Johnson et al., 2014).

Discussion

The purpose of this qualitative study is to understand how the failures of the current preparedness policies contribute to the lack of individual and family preparedness and the political, social, and psychological factors that drive individuals and families to prepare—or not—for disasters. The Department of Homeland Security and FEMA have promoted preparedness to Americans for decades. However, research shows that citizens either will not or cannot take the steps needed to prepare for disaster events. The research conducted for this study supports this, showing that efforts by DHS and FEMA have not been effective in informing and educating Americans about why they need to prepare and how to do so.

Theoretical

The theory guiding this study is VIT as it applies to the behaviors of individuals in relation to preparedness for disaster events. Miller et al. (2013) explains that the nature of attitude-behavior relationships is more complicated than it seems. They further state that even strongly held attitudes do not always correlate with other attitudes or beliefs, which can be the result of thoughts, emotions, context, and culture (Miller et al., 2013). Vested interest theory concerns the hedonic (pleasant or unpleasant sensation) relevance of an attitude-object in its ability to have meaningful, personal consequences for an individual attitude holder. If an individual's attitude and the attitude-object in question are hedonically relevant, then the attitude in question is highly vested for the individual. Vested attitudes, or vested interests, are powerful predictors of attitude-behaviors. Attitudes that are not vested for the individual do not normally predict attitude-behaviors, as they have little or no relation to the attitude-object (Crano &

Prislin, 1995; Miller et al., 2013). Through the research questions, it becomes clear that preparedness behaviors and preparedness actions are heavily influenced by preparedness beliefs and preparedness knowledge. Higher response rates to certain survey questions related to beliefs and knowledge correlate to higher response rates to survey questions related to behaviors and actions. For example, those who have a higher perception of risk (the attitude-object) tend to have a higher rate of developing a household plan, which is a preparedness behavior or attitude-behavior, and a higher rate of gathering emergency supplies, which is a preparedness action or attitude-behavior.

Two other theories of social psychology were considered in line with VIT. First, RCT holds that the aggregate of all social behaviors is the result of subjective individual decisions and behaviors within the social system. These decisions and behaviors are rational from the perspective of the individual, based entirely on the expected return the decision or behavior brings back to the individual. With RCT, the state has no influence over individuals, which negates the perspective that public policy can drive behavior changes. This research tends to indicate that RCT may be a viable theory to explain preparedness behaviors; however, as discussed, the Ready Campaign has been shown to have little impact on preparedness among Americans. The idea that Americans make subjective decisions to prepare or not is plausible (Hechter & Kanazawa, 1997, p. 191).

Second, TC, originally an economic theory, asserts that individuals consciously take irrational risks in the hope that fate will be on their side and any expected negative outcome will not come to pass. This is the idea that ‘lightning does not strike the same place twice.’ The commons, or property that is available for use by every common person, suffers from the fact that nobody has a self-interest or personal responsibility for its preservation (Hardin, n.d.; 1968).

With individual and family preparedness, TC is not at issue. The problem is not community preparedness, but private preparedness, which is not part of the commons. In this research, there is little support for TC with the exception of the Florida case study, which indicates that many who chose not to evacuate ahead of the storm also did not prepare for the storm's landfall, thus taking an irrational risk. Also, those who purchased disaster supplies before and after landfall did not always make logical purchases, often buying perishable supplies or supplies more akin to party preparation than emergency preparation.

Vested interest theory explains the behaviors of individuals related to preparedness. Individuals with a higher level of knowledge about preparedness and who believe preparedness is important show an equally high level of engaging in preparedness behaviors and taking preparedness actions. Those with a vested interest in preparedness, based on the attitude-objects associated with preparedness, display attitude-behaviors related to preparedness. Those without a vested interest in preparedness display attitude-behaviors related to preparedness at a significantly lower rate. This result is supported by the surveys and case studies, all of which point to the same conclusion; that Americans have to know about and care about preparedness before they will display behaviors and take action to get prepared.

Empirical

The literature related to this study is divided into policy documents, government research, and academic research. The policy documents are discussed in the policy evaluation in Chapter 4. Within the government research category, there are several documents that indicate problems with past and current preparedness policies. A particularly relevant GAO audit is from 2010, entitled *FEMA Faces Challenges Integrating Community Preparedness Programs into its Strategic Approach*. This report details difficulties FEMA has faced with integrating individual

preparedness into the NPS (Jenkins, 2010). An example of the type of research conducted by FEMA is *Personal Preparedness in America: Findings from the 2009 Citizen Corps National Survey*, which provides recommendations for improvement to individual preparedness policies at the national and state level (FEMA, 2009). In another example from 2014, FEMA published *Preparedness in America: Research Insights to Increase Individual, Organizational, and Community Action*. It is acknowledged by FEMA that past national preparedness efforts did not cultivate a culture of preparedness among Americans, and that changes are needed in both the national approach to preparedness and in individuals' views of the need for preparedness (FEMA, 2014). The *2015 National Household Survey* is also a FEMA publication and indicates that messaging on preparedness should shift focus from general preparedness to preparedness for specific hazards. Further, the survey concludes that increased awareness of the impacts of specific hazards increases the likelihood that individuals take preparedness seriously (FEMA, 2015). With this targeted approach in mind, FEMA began publishing documents like its *Building Cultures of Preparedness: Report for the Emergency Management Higher Education Community*. This report presents recommendations and strategies for individual and community preparedness specifically targeted at the higher education community (FEMA, 2019). These documents are used extensively in this study, both for the policy evaluation and for the survey analysis, and generally support this study's findings.

There is more support for the premise of this research study within academic research, including dissertations and research papers. To begin, a 2019 article by Hong, Kim, & Xiong, *Media Exposure and Individuals' Emergency Preparedness Behaviors for Coping with Natural and Human-Made Disasters*, asserts that individual and family emergency preparedness is critical to improve resilience for disaster events. Using media exposure as a measurement, the

authors test the effect of media exposure on risk perception and preparedness behaviors, specifically in Hangzhou, China. Their results show that higher media exposure increased both the perception of risk and preparedness behaviors overall, regardless of an individual's actual disaster experience. (Hong et al., 2019) Choi and Wehde suggest in a 2020 article that the lack of preparation among Americans in tornado zones, despite local and national directives to prepare, is due to a lack of trust in both local and federal authorities. *Trust in Emergency Management Authorities and Individual Emergency Preparedness for Tornadoes* argues that the level of trust an individual has in local and federal emergency management authorities affects their level of preparedness (Choi & Wehde, 2020). Further, the authors find that increased levels of preparedness for tornadoes can be explained by higher levels of trust in local government rather than federal government agencies such as FEMA (Choi & Wehde, 2020). This supports the idea that a federal-centric approach to preparedness policy does not drive preparedness behaviors among American individuals and families. However, the federal-centric approach is not the only issue. In *Emergency Responder Personal Preparedness*, Kelenske investigates the phenomenon of a lack of individual and family preparedness among emergency response workers. Although these emergency response workers are responsible for assisting in disasters and in educating citizens on the importance of preparedness, generally they are not themselves prepared (Kelenske, 2011). Perhaps the foundational flaw in individual preparedness is that current and past plans have been largely based on poor assumptions. The authors of *Citizen Preparedness for Disasters: Are Current Assumptions Valid?* point out that current government programs addressing individual preparedness are based on a series of flawed assumptions that need to be corrected for preparedness policy to be effective. The authors conclude that the role that individuals and families are being asked to play is largely based on conventional wisdom rather

than on concrete fact or empirical evidence (Uscher-Pines et al., 2012). This is not an exhaustive list of the academic research that supports this study's findings, but is representative of the existing empirical research in this field.

Extending Vested Interest Theory

Vested interest theory explains the thought processes of individuals related to their preparedness behaviors and actions. The components of VIT defined by Adame & Miller (2015) are stake, salience, certainty, immediacy, and self-efficacy (see Definitions on page 22). These components describe how the hedonic relevance of an individual's attitude toward an attitude-object increases or decreases vested interests. These components of VIT correlate with the themes identified in this study, specifically preparedness beliefs and preparedness knowledge. Both preparedness beliefs and preparedness knowledge drive preparedness behaviors and actions through their effects on vestedness in the same way that stake, salience, certainty, immediacy, and self-efficacy influence attitude-behaviors through their effects on vestedness.

The attitude-objects associated with preparedness beliefs – theme 1 – are perceived risk, perceived barriers to preparedness, and preparedness efficacy. According to the survey results, 98% of respondents indicated that their perception of risk influenced their level of preparedness; those that perceived a greater risk to themselves or to their families were more likely to engage in preparedness behaviors and actions. The greatest reported barrier to preparedness was finances, with around half of respondents reporting that they have little or no money set aside for emergencies. Preparedness efficacy responses varied widely between 42% and 94% believing preparedness helps during a disaster, with higher response rates generally dependent on an individual's past experience with disaster events.

The attitude-objects associated with preparedness knowledge – theme 2 – are, knowledge of local preparedness plans and systems, receipt of preparedness information, and past experience with disaster events. While FEMA has placed a strong emphasis on educating the public about preparedness, the survey results and other research indicate that the result of this emphasis has been lukewarm. Survey results show that 43 to 61% of respondents know about local preparedness plans and systems, but only 35 to 44% think that these plans and systems are adequate to address potential disaster events. 40 to 65% of respondents received preparedness information from any source at any time; this response rate did not consistently increase over time, but rather increased and decreased year-to-year. Finally, 43 to 58% of respondents had either direct or familial experience with past disaster events.

This study found that the federal-centric approach of current and past preparedness policy has had only a minimal impact on individual and family disaster preparedness. The policy evaluation confirmed that individual and family preparedness is an important component of overall national preparedness. Despite this significant and long-term efforts undertaken by FEMA to inform the public, including the Ready Campaign, multiple government and academic studies have found that FEMA's efforts have been ineffective in causing preparedness behaviors for most Americans. Based on this study's findings, the reason for the lack of overall preparedness policy effectiveness is that it focuses on the wrong things. According to Adame & Miller (2015), FEMA defines basic individual preparedness as having three things: a disaster kit (which includes water, food, and other supplies), an emergency plan, and being informed regarding preparedness (p. 272). Only one of these three things is an attitude-object, being informed, while the other two are attitude-behaviors. By placing such a strong emphasis on

preparedness attitude-behaviors, policy has failed to influence the preparedness beliefs and knowledge which are the actual drivers of preparedness behaviors and actions.

What can be concluded from the results of this study is that VIT can be used to develop a model to explain preparedness behaviors. It is evident that preparedness efficacy, the belief that preparedness helps during a disaster event, depends primarily on perception of risk and past experience with other disasters. Receipt of preparedness information, knowledge of local plans and systems, and perceived barriers to preparedness correlate with preparedness efficacy as well, but to a lesser degree. These conclusions point to an explanatory model for individual and family preparedness based upon VIT concepts and the themes found in this study, which will be discussed in more detail in the next section.

Implications and Recommendations

The results of this study support the conclusions of past research, which generally indicates that preparedness policy has not been effective in influencing American individuals and families to prepare for disaster events. A low level of individual and family preparedness results in greater loss of life and increased costs to taxpayers during a disaster response because more people require assistance due to disaster effects. The results of this study concerning individual and family preparedness can have significant impacts on preparedness policies at the federal, state, and local levels and on further academic research in this area. The study shows that attitude-objects, specifically preparedness knowledge and preparedness beliefs, are drivers of attitude-behaviors that relate to individual and family preparedness. An understanding of vested interests related to preparedness can influence changes to preparedness policies to make them more effective in influencing preparedness behaviors.

Theoretical Implications

The themes emerging from this study are based on Veblen's VIT, identifying attitude-objects and attitude-behaviors. Preparedness knowledge and beliefs are tied to attitude-objects, and preparedness behaviors and actions are tied to attitude-behaviors. From these categories, four themes are developed. Preparedness knowledge is attitude-objects reflecting things individuals know to be true based on evidence. Preparedness beliefs are attitude-objects reflecting things individuals know to be true based on feelings or experience. Preparedness behaviors are attitude-behaviors based on the way a person lives in relation to preparedness. Preparedness actions are attitude-behaviors based on the things a person does in relation to preparedness. Vested interest theory states that vested attitudes, or vested interests, are powerful predictors of attitude-behaviors. Attitudes that are not vested for the individual do not normally predict attitude-behaviors, as they have little or no relation to the attitude-object (Crano & Prislin, 1995; Miller et al., 2013). This research makes it clear that preparedness behaviors and preparedness actions are heavily influenced by preparedness beliefs and preparedness knowledge. Higher response rates to certain survey questions related to beliefs and knowledge correlated to higher response rates to survey questions related to behaviors and actions. From this research, it is clear that VIT is a viable predictor of preparedness behaviors among American individuals and families.

Theme one, preparedness beliefs, consists of attitude-objects that influence preparedness behaviors. Survey responses support the idea that beliefs and knowledge influence behaviors and actions. For example, 98% of survey respondents in 2018, 2019, and 2020 indicate that their perception of risk for disasters is a key disaster preparedness influencer. The Colorado and Florida case studies also support this idea, as the individuals who either prepared or evacuated had beliefs associated with high-risk perception and had knowledge about the storms prior to

them becoming major disasters. Theme two, preparedness knowledge, also consists of attitude-objects that influence preparedness behaviors. Homeland security policy places a heavy emphasis on the importance of informing and educating the public about preparedness. Though federal efforts have fallen short with public information campaigns like the Ready Campaign, awareness of preparedness information is still an attitude-object that influences preparedness behavior. Survey responses indicate that only between 40% and 65% of respondents have received preparedness information from any source. This rate is 63% in 2013, goes down to 40% in 2017, increases to 47% in 2020, and finally increased to 65% in 2022.

Theme three, preparedness behaviors, consists of attitude-behaviors that are influenced by preparedness beliefs. The most consistently surveyed preparedness behavior is a household emergency plan. This is also one of the most frequently publicized steps for individual preparedness by the federal government. Among all 11 evaluated surveys, 39% to 61% of respondents indicate they have at least a basic household emergency plan. This means that potentially just over half of Americans have an emergency plan, which is lower than would be expected based on the decades-long preparedness education effort by the federal government. Theme four, preparedness actions, also consists of attitude-behaviors that are influenced by preparedness beliefs. Preparedness actions are things people do to prepare for disasters, which are more tangible than just having a plan or talking to people about preparedness. Chief among these is gathering emergency supplies. In the 2012 survey, 83% of respondents report having emergency supplies. The number dips down to 52% in 2013 and 2014, but then steadily increases back up to 81% in 2020 and 75% in 2022 with emergency supplies. Homeland security policy places a great deal of emphasis on gathering emergency supplies. Most often, individuals are asked to have enough supplies on hand to survive for 72 hours—three days—following a

disaster. This is meant to allow first responders time to respond to life-or-death situations immediately after a disaster before people need help. Emergency supplies include water, food, medication, and comfort items for all family members, including animals (Pittenger, n.d., p. 23; Jenkins, 2010, p. 1).

Empirical Implications

This research and past government and academic research indicate that federal preparedness policy has not been effective in influencing American individuals and families to prepare for disaster events. A low level of individual and family preparedness is a problem because it results in greater loss of life and increased costs to taxpayers during a disaster response. According to academia, the research consensus is that change is needed, though the nature of that change is debated. One key source is *Trust in Emergency Management Authorities and Individual Emergency Preparedness for Tornadoes* by Choi and Wehde (2020), which examines the lack of preparation among Americans in tornado zones despite local and national directives to prepare. Another key source is *Citizen Preparedness for Disasters: Are Current Assumptions Valid?*, by Lori Uscher-Pines et al. (2012), which posits that current preparedness policy is based on a series of flawed assumptions that need to be corrected for policy to be effective. A significant shortcoming in existing research is a lack of investigation of the behavior of individuals and families, which contributes to failing to prepare. Existing research focuses heavily on identifying problems with policy design and implementation and on recommendations to modify policy in response. What is missing is a coherent understanding of the reasons Americans do not prepare at the individual level; continuing to emphasize preparedness from the top down is clearly not working. The implications from this research are that VIT can be applied to the preparedness problem in America. By placing emphasis on the attitude-objects within the

themes of preparedness beliefs and preparedness knowledge, attitude-behaviors can be influenced to change.

Practical Implications

One implication of this study is for federal preparedness policy. This study focuses primarily on federal preparedness policy and on national preparedness surveys, giving it a direct application to federal policy. The majority of federal preparedness policy documents indicate that individual preparedness is an important component, if not foundational, to national preparedness. However, these policies go into little detail on the specific things individuals are expected to do to contribute to national preparedness. It can be assumed that the federal government does not want to be proscriptive in an area that it sees as the responsibility of the states and local communities, but it is highly proscriptive in most other areas of preparedness down to the community level. This research study shows that preparedness beliefs and knowledge influence preparedness behaviors and actions by individuals. If federal policy can be modified to place emphasis on the components of beliefs and knowledge, the policies can therefore influence preparedness behaviors among American individuals and families.

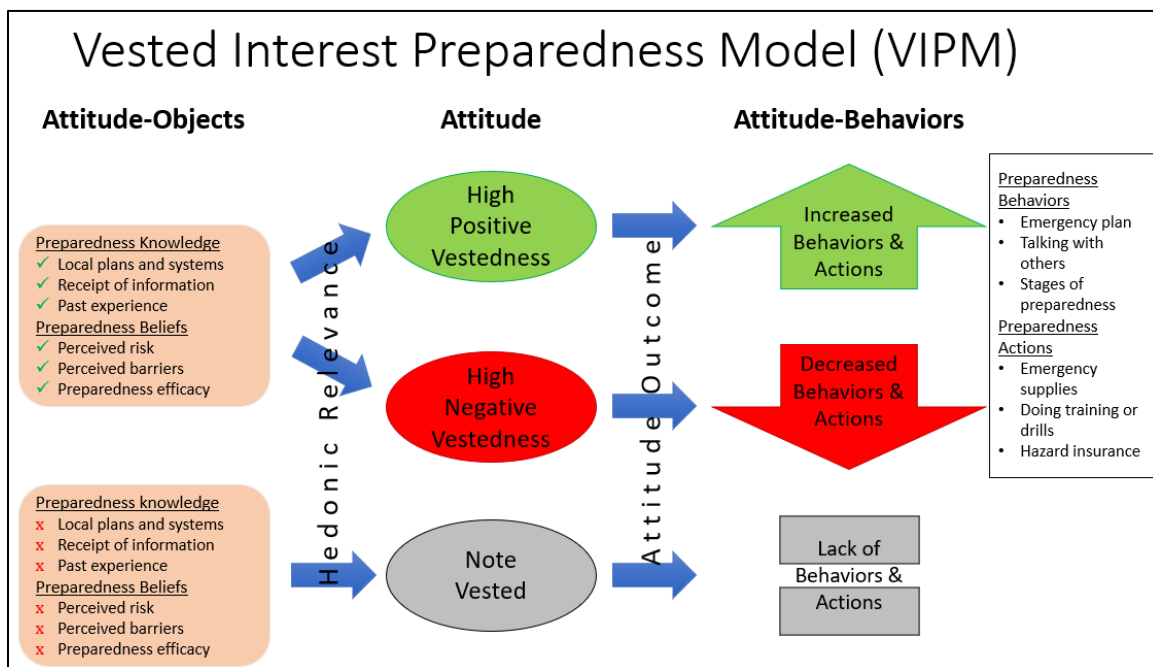
Another implication of this research is for state and local preparedness efforts. These are considered in federal policy to be the key link between government and individual preparedness. For preparedness efforts to increase to encompass individuals and families, they must take a broader approach than they have traditionally done. Many programs, such as the CCP, focus on community preparedness, but the preparedness is for a disaster response rather than for individual readiness to weather the impacts of a disaster. If state-level and below efforts can shift focus from disaster response preparedness to individual preparedness behaviors and actions, the

foundational role of individual preparedness can be strengthened, thus improving national preparedness.

A third implication of this research is for public information campaigns. This research has shown that information campaigns such as FEMA's Ready Campaign have been ineffective in influencing preparedness behaviors among Americans. The messaging has tended to be focused on informing individuals of what they need to do, such as making an emergency plan and gathering emergency supplies. However, the messaging is missing the 'why' and 'how.' If campaigns can inform individuals of why they need to prepare and how to go about doing it, they can better get at the attitude-objects associated with preparedness beliefs and preparedness knowledge.

The Vested Interest Preparedness Model (VITM)

This research contributes to the body of knowledge in emergency management and preparedness by extending the vested interest theory into a preparedness-specific model that explains preparedness behavior. The Vested Interest Preparedness Model (VIPM) is an explanatory model for individual and family preparedness behaviors. It is based on VIT, using the same terminology and processes present in VIT, but extending them to implement the themes found in this research study. Figure 2 below is a diagram of the VIPM to aid in understanding.

Figure 2*Vested Interest Preparedness Model (VIPM) Diagram*

As in Chapter 2, Figure 1, the diagram displays attitude-objects, attitudes, and attitude-behaviors in the columns from left to right. High vestedness has been divided into two rows at the top based on either positive or negative hedonic relevance and low vested interest in the bottom row. The attitude-objects for preparedness beliefs and knowledge are detailed in the boxes on the left, and the attitude-behaviors for preparedness behaviors and actions are detailed in the box on the right. An individual with a vested interest in preparedness has a hedonically relevant attitude toward one or more of the attitude-objects shown. The more of these objects with hedonic relevance, the more vested the attitude, and thus the greater change in behavior as a result. The hedonic relevance can be either positive or negative, resulting in either increased or decreased behavior as a result. The goal of preparedness policy is to increase preparedness behaviors, which means that policy should seek to influence positive hedonic relevance toward attitude-objects related to preparedness. An individual who is indifferent to the preparedness

attitude-objects will show a lack of behaviors associated with preparedness. On the surface, an individual with no vested interest in preparedness could appear the same as one that is highly vested but with negative hedonic relevance, as neither of these individuals are increasing their preparedness behaviors. However, it is very different for an individual to lack preparedness behavior than for an individual to actively avoid preparedness behavior.

The VIPM has broad implications for the fields of emergency management and disaster preparedness. Theoretically, it takes VIT and progresses it forward to have direct applicability to the failures of policy related to individual and family disaster preparedness. This model can now be tested using different circumstances to either validate or refute its assertions. Empirically, it is backed by evidence from the policy evaluation, survey analysis, and case study analysis detailed in this study. The results of this study add weight to the ability of this model to explain behaviors and actions related to preparedness. Practically, this model can be used to examine and modify policy and public information efforts related to preparedness. By following this model, preparedness policy will finally be able to achieve what it has been attempting to achieve, which is to cause American individuals and families to prepare for disasters.

Delimitations and Limitations

This study is delimited in several ways. The first delimitation is that policy documents published only since 9/11 have been selected. Limiting this review to the policy environment of the past 20 years does little to reduce the scope of this evaluation. This limitation increases the relevance of the evaluation in the hope of modifying existing policy to improve individual and family preparedness. The second delimitation is the scope of the surveys. The selected surveys were conducted between 2010 and 2020 to ensure the surveys' results are relevant to current federal preparedness policy and to the selected case studies. The majority of these surveys were

conducted by FEMA, either directly or through the Citizens' Corps. There are also surveys from the CDC and from Columbia University's NCDP. There are more consistent surveys in the latter half of the selected decade than in the early half of the decade, but the selected surveys generally span the entirety of the period of 2010 to 2020. The third delimitation is the case study selection criteria. The case studies were selected with four criteria in mind. First, this research needed case studies that spanned multiple different years within the period under study, 2010 to 2020. The case studies also needed to be relatively recent to show that the preparedness issues are a current problem. To meet these criteria, case studies have been chosen from 2013, 2018, and 2020. Second, the case studies needed to present a range of geographical locations so the studies could approach being representative in nature. Case studies from one state or region may not apply to another very different region. To meet these criteria, case studies from Florida, Colorado, and Washington have been chosen. Third, the case studies needed to represent different disaster scenarios, which illustrate that preparedness is necessary for a variety of circumstances. To meet these criteria, the chosen case studies are from a hurricane, from floods, and from a pandemic influenza outbreak. These are all naturally occurring disasters, which are very different in nature, but which have similar impacts on individuals and families related to preparedness. Fourth, the chosen case studies needed to have enough information available to complete good quality research. Many candidates that met the first three criteria did not meet this fourth criterion. The case studies could not be a roadblock, so the case studies selected have a wide variety and amount of information to complete this research.

The main limitation of this study is that the data sources for this study are secondary sources, surveys conducted by government and academic institutions with roles related to disaster preparedness. Ten surveys were selected from three different agencies, all of which were

published between 2010 and 2020. Six of the surveys are from FEMA, three are from the NCDP, and one is from the CDC. All but one of the surveys represent the national U.S. population. The exception is the CDC survey, which includes participants from 14 states. The smallest number of survey participants of the 10 surveys is 1,000 people, while the largest number of survey participants is over 93,000. In sum, the number of participants across the 10 surveys is 132,608 people.

Recommendations for Future Research

The design of this research focuses on examining past and current federal preparedness policy. While federal policy drives policy at the state level and below, there are opportunities to examine preparedness policies at different levels of government to determine if the same conclusions are reached. The scope of the policy sources used for a study of this nature could be narrowed or expanded in various ways to look at different aspects of preparedness policy. An example would be to compare and contrast preparedness policy today with similar policies in other nations, or to look at similar policies from America in the past. These examinations could provide further insight into problems or successes with preparedness policy in America today.

This study uses VIT as a framework to formulate a basis for understanding the reason or reasons that preparedness policies have not resulted in preparedness behaviors among Americans. There are opportunities for analysis of preparedness using different social and behavioral psychology theories or models to determine if VIT is the best fit or not. This research uses RCT and TC to perform a cursory examination of this issue, but determined that these theories are not explanatory of the issues associated with preparedness to the same degree as VIT. There is a myriad of theoretical models that could add to what this study has found, or even refute this study's findings.

This research uses three selected case studies, but these case studies may not be truly representative of all circumstances, locations, or disaster events. There are opportunities to analyze preparedness issues related to other case studies, which could either confirm or refute this study's findings.

Finally, based on this study, it is recommended that VIT be used to draft modifications to PPD-8 and the NPS. These modified policies could then be used to survey Americans on the impact the new policies would have on their attitudes. By shifting the focus of federal preparedness policy to individual preparedness, using the attitude-objects associated with preparedness beliefs and preparedness knowledge, federal policy can do a better job of influencing preparedness behaviors among Americans. This would ultimately improve overall national preparedness.

Summary

This chapter provides a summary of the findings of this study and lists the implications and recommendations based on the study. The summary of findings lists the themes and answers to research questions as described in Chapter 4. This is followed by a theoretical and empirical discussion of the results of this study. After the discussion, implications and recommendations are presented, along with delimitations, limitations, and recommendations for future research. Through this study, the components of individual and family preparedness became clearer and easier to understand. Preparedness has been widely promoted by DHS and FEMA to Americans for decades. However, this research shows that a consistent issue is that citizens either will not or cannot take the steps needed to prepare for emergency situations. This research shows that VIT explains the behaviors of individuals related to preparedness. Individuals with a higher level of knowledge about preparedness and who believe preparedness is important show an equally high

level of engaging in preparedness behaviors and taking preparedness actions. To increase the level of preparedness among American individuals and families, policy must do two things effectively; it must increase the level of preparedness knowledge and it must influence beliefs that preparedness helps during an emergency. This study shows conclusively that increasing preparedness knowledge and preparedness beliefs will increase preparedness behaviors and preparedness actions. When individuals have a vested interest in the attitude-object of preparedness, their behavior changes to correspond.

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APPENDIX A

Survey questions for 2022 Individual and Family Disaster Preparedness in America Survey.

Preparedness Beliefs

The following questions relate to your personal beliefs about disasters and preparedness.

1. I believe that there is a risk of a major disaster event occurring in or near my home. A major disaster could include an earthquake, tornado, hurricane, wildfire, flood, severe storm, or other related event.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree
2. I believe that preparing for a major disaster event will help me and my family survive the disaster's effects. Preparing could include making a plan, practicing our plan, gathering supplies, or other related preparedness activities.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree
3. I have set aside financial resources (i.e., money) to have on hand for a major disaster event.
 - a. Strongly Agree

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

Preparedness Knowledge

The following questions relate to your personal knowledge about disasters and preparedness.

- 4. I have received or sought out information related to disasters and/or preparedness in my area. This could include internet research, calling local authorities, or printed materials such as brochures or pamphlets.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree
- 5. I have personal or family experience with major disaster events. This could include personally experiencing a major disaster event or having a family member or loved one personally experience a major disaster event.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree

Preparedness Behaviors

The following questions relate to behaviors you have engaged in which relate to disaster preparedness.

6. I have made an emergency plan for myself and/or my family that addresses what to do during a major disaster event. This plan could be written, typed, or verbal.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree
7. I have spoken with other people about getting prepared for a major disaster event. These conversations could be either general or specific in nature, but are related in some way to disaster preparedness.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree
8. Based on your assessment of your disaster preparedness beliefs, knowledge, and behaviors, which stage of preparedness would best fit you and/or your family?
 - a. Stage 1: Precontemplation: I have NOT prepared, and I DO NOT intend to prepare in the next year

- b. Stage 2: Contemplation: I have NOT prepared, but I intend to prepare in the next year
- c. Stage 3: Preparation: I have NOT prepared, but I intend to prepare in the next six months
- d. Stage 4: Action: I have been prepared for the last year
- e. Stage 5: Maintenance: I have been preparing for MORE than a year

Preparedness Actions

The following questions relate to actions you have taken to prepare for a disaster.

- 9. I have gathered supplies, such as food, water, and medical supplies, to last three or more days in the event of a major disaster.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree
- 10. I have attended a local preparedness meeting or training event, or participated in a local emergency drill.
 - a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree

11. I have purchased homeowner's or renter's insurance and have purchased hazard-specific insurance such as flood insurance or earthquake insurance.
- a. Strongly Agree
 - b. Agree
 - c. Neither Agree nor Disagree
 - d. Disagree
 - e. Strongly Disagree

Demographics

The following questions are for demographic purposes only. This information is anonymous.

12. What is your age?
- a. Under 18
 - b. 18 to 30
 - c. 31 to 50
 - d. 51 to 70
 - e. 71 or Older
 - f. Prefer Not to Answer
13. What is your gender?
- a. Male
 - b. Female
 - c. Not Specified
 - d. Prefer Not to Answer
14. What is your ethnicity?
- a. White

- b. Black
 - c. Hispanic
 - d. Other
 - e. Prefer Not to Answer
15. What is your approximate annual income?
- a. Less than \$52,200
 - b. \$52,200 to \$156,600
 - c. \$156,600 or More
 - d. Prefer Not to Answer
16. What is your highest level of education?
- a. Some High School
 - b. High School Diploma or G.E.D.
 - c. Some College or Tech/Trade School
 - d. Bachelor's Degree
 - e. Master's Degree
 - f. Post-Graduate, Doctoral, or Ph.D. Degree
 - g. Prefer Not to Answer

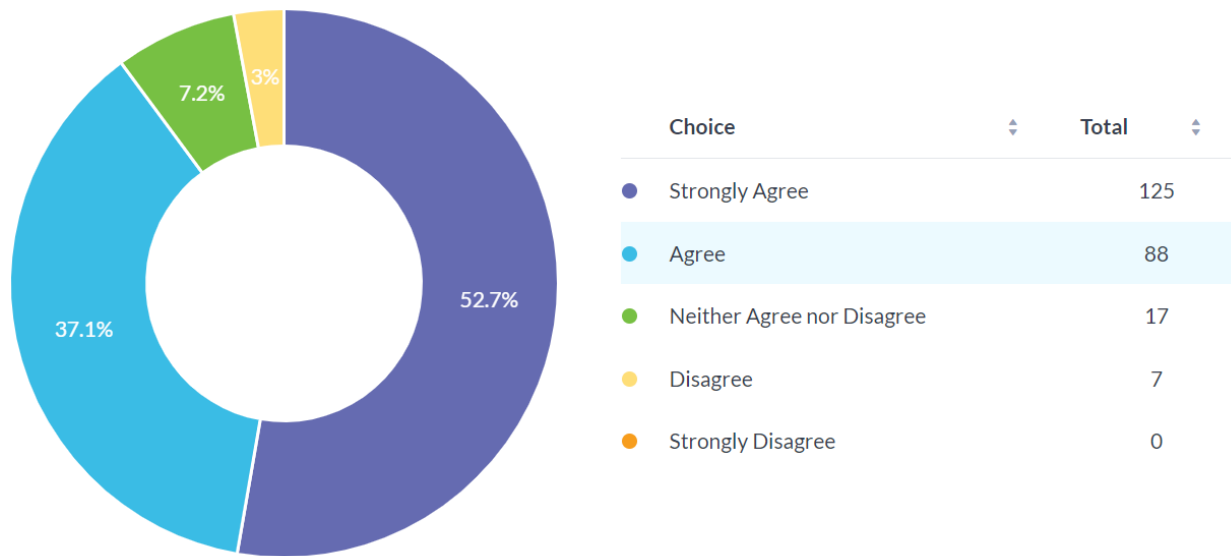
APPENDIX B

Survey responses for 2022 Individual and Family Disaster Preparedness in America Survey.

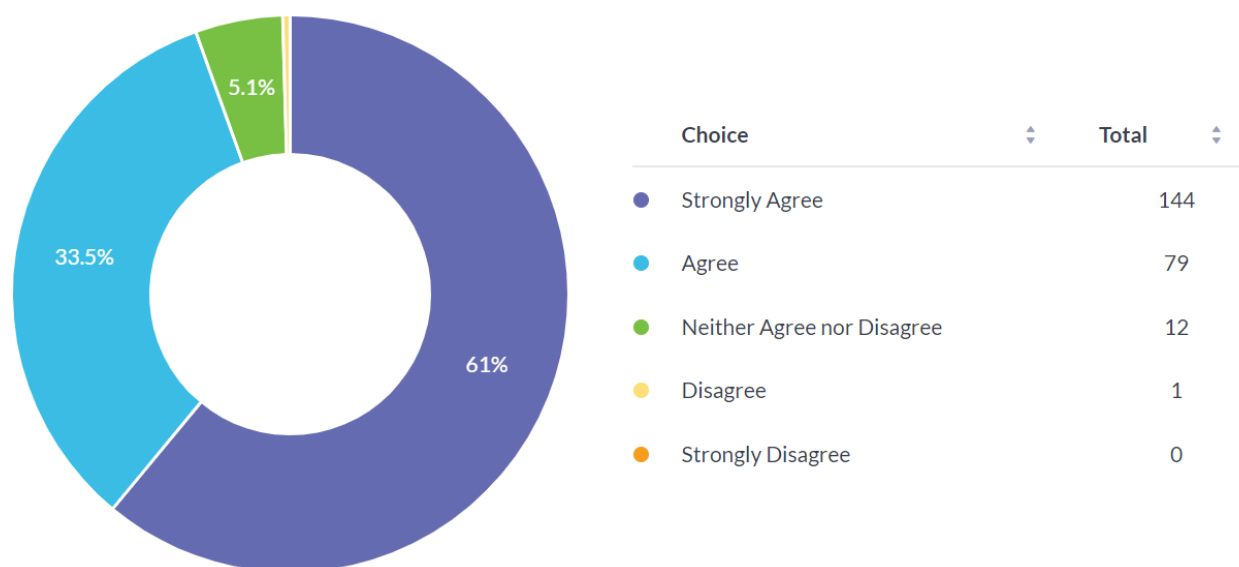
Preparedness Beliefs

The following questions relate to your personal beliefs about disasters and preparedness.

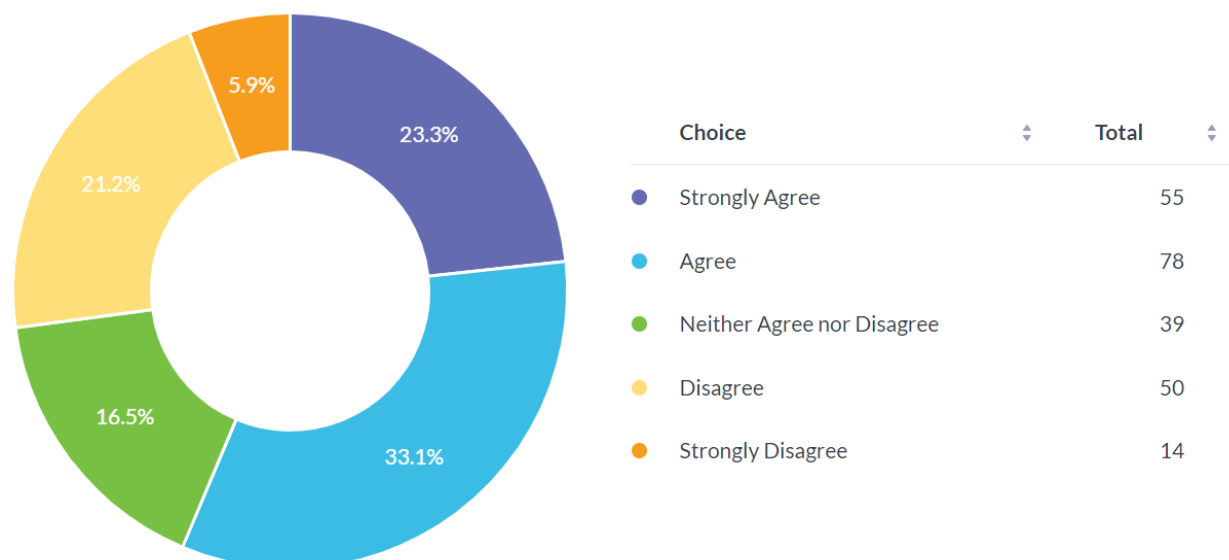
1.
- I believe that there is a risk of a major disaster event occurring in or near my home. A major disaster could include an earthquake, tornado, hurricane, wildfire, flood, severe storm, or other related event.



2. I believe that preparing for a major disaster event will help me and my family survive the disaster's effects. Preparing could include making a plan, practicing our plan, gathering supplies, or other related preparedness activities.



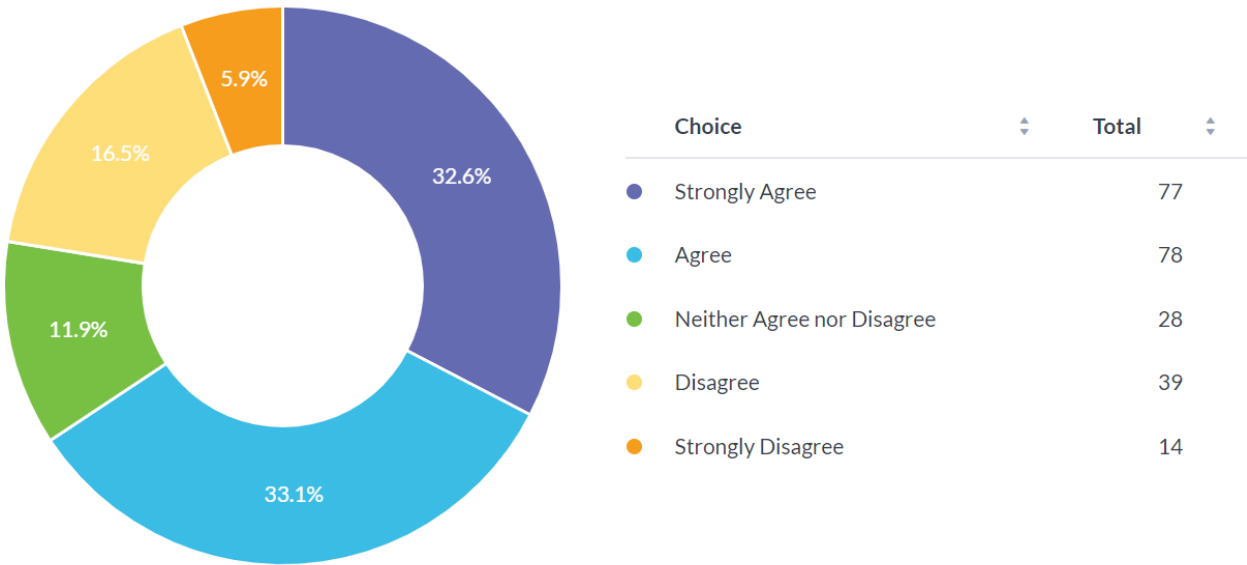
3. I have set aside financial resources (i.e., money) to have on hand for a major disaster event.



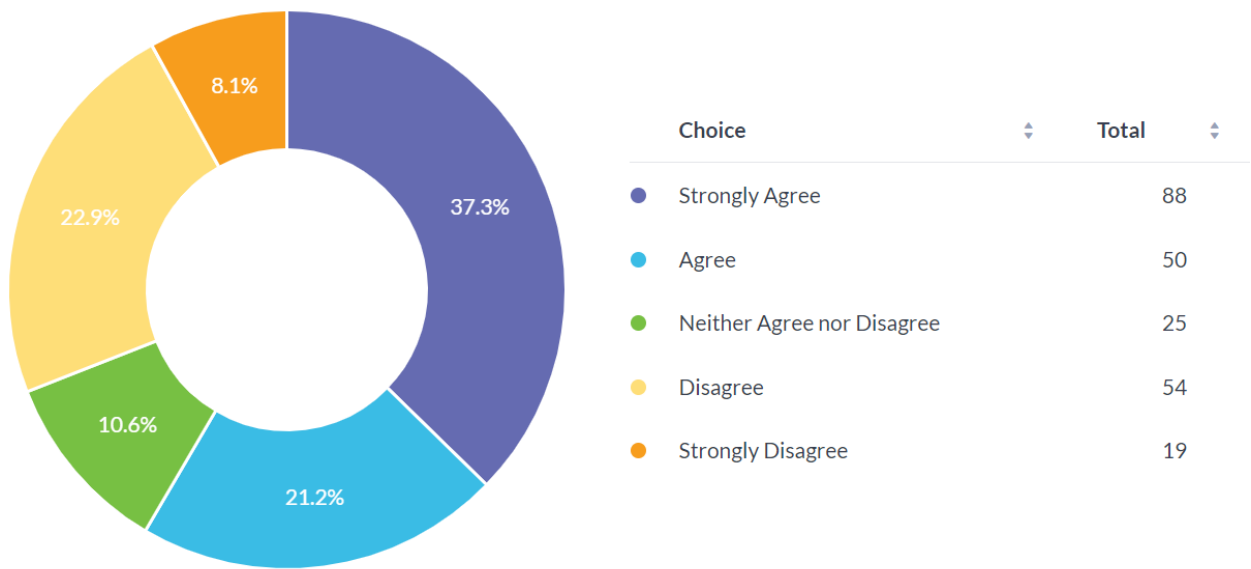
Preparedness Knowledge

The following questions relate to your personal knowledge about disasters and preparedness.

4. I have received or sought out information related to disasters and/or preparedness in my area. This could include internet research, calling local authorities, or printed materials such as brochures or pamphlets.



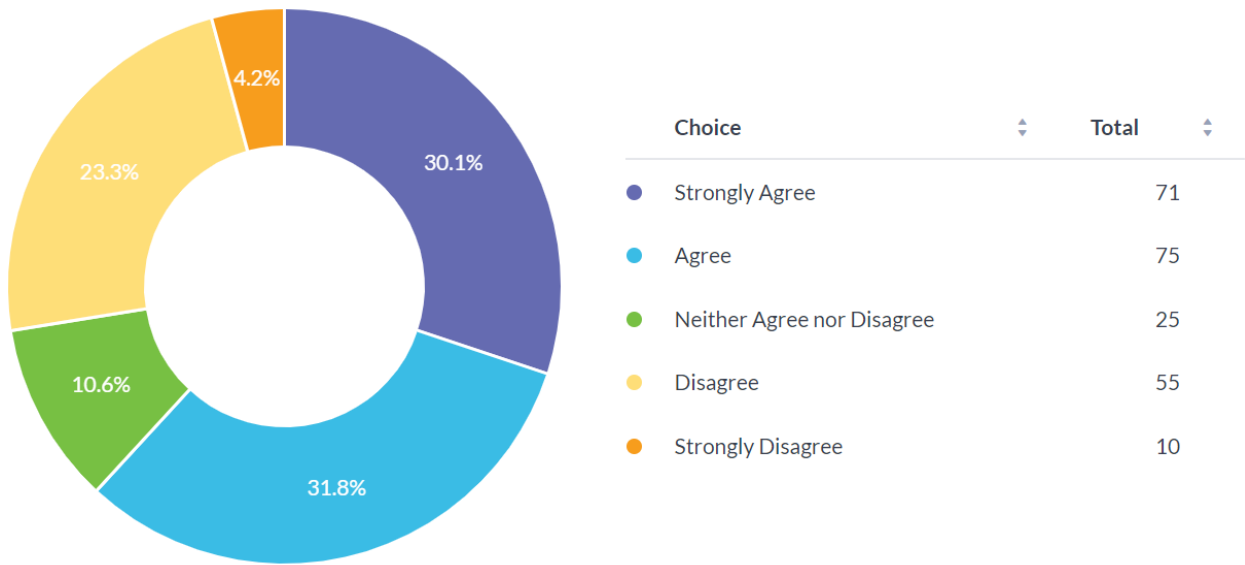
5. I have personal or family experience with major disaster events. This could include personally experiencing a major disaster event or having a family member or loved one personally experience a major disaster event.



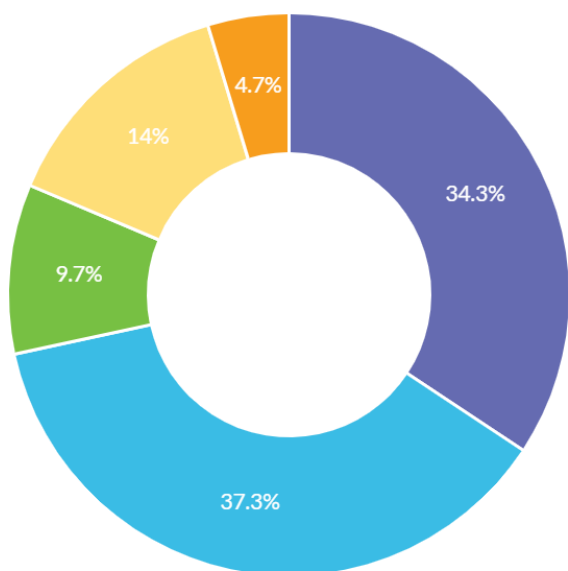
Preparedness Behaviors

The following questions relate to behaviors you have engaged in which relate to disaster preparedness.

6. I have made an emergency plan for myself and/or my family that addresses what to do during a major disaster event. This plan could be written, typed, or verbal.

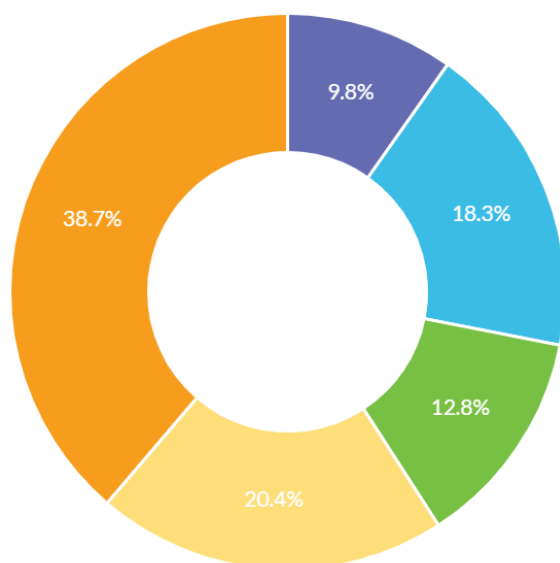


7. I have spoken with other people about getting prepared for a major disaster event. These conversations could be either general or specific in nature, but are related in some way to disaster preparedness.



Choice	Total
Strongly Agree	81
Agree	88
Neither Agree nor Disagree	23
Disagree	33
Strongly Disagree	11

8. Based on your assessment of your disaster preparedness beliefs, knowledge, and behaviors, which stage of preparedness would best fit you and/or your family?

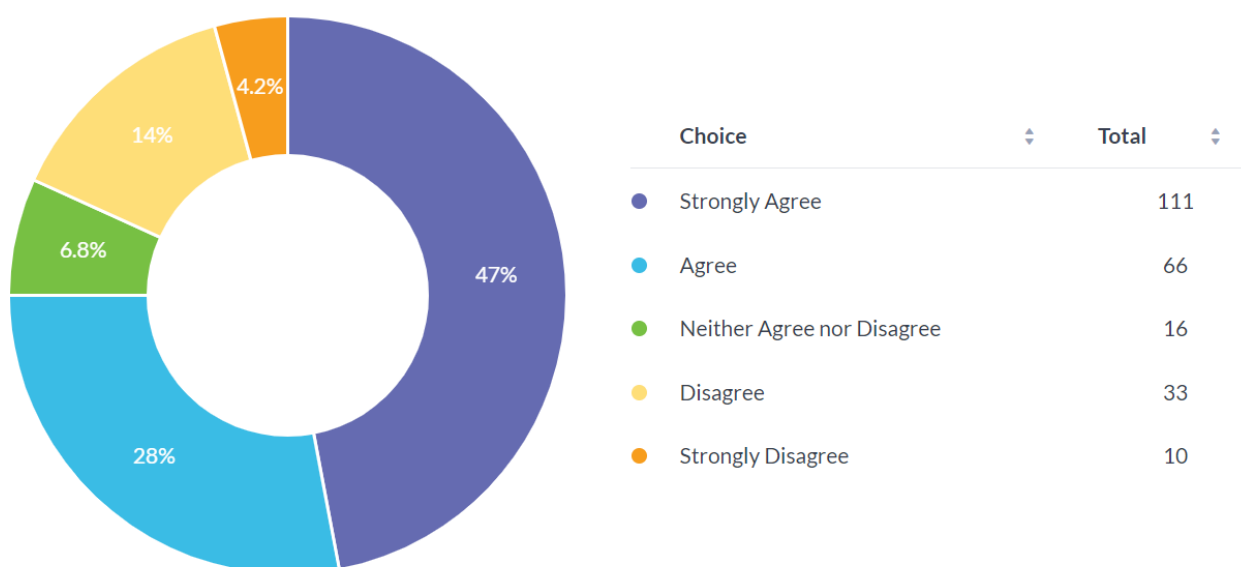


Choice	Total
Stage 1: Precontemplation: I have NOT prepared, and I DO NOT intend to prepare in the next year	23
Stage 2: Contemplation: I have NOT prepared, but I intend to prepare in the next year	43
Stage 3: Preparation: I have NOT prepared, but I intend to prepare in the next six months	30
Stage 4: Action: I have been prepared for the last year	48
Stage 5: Maintenance: I have been preparing for MORE than a year	91

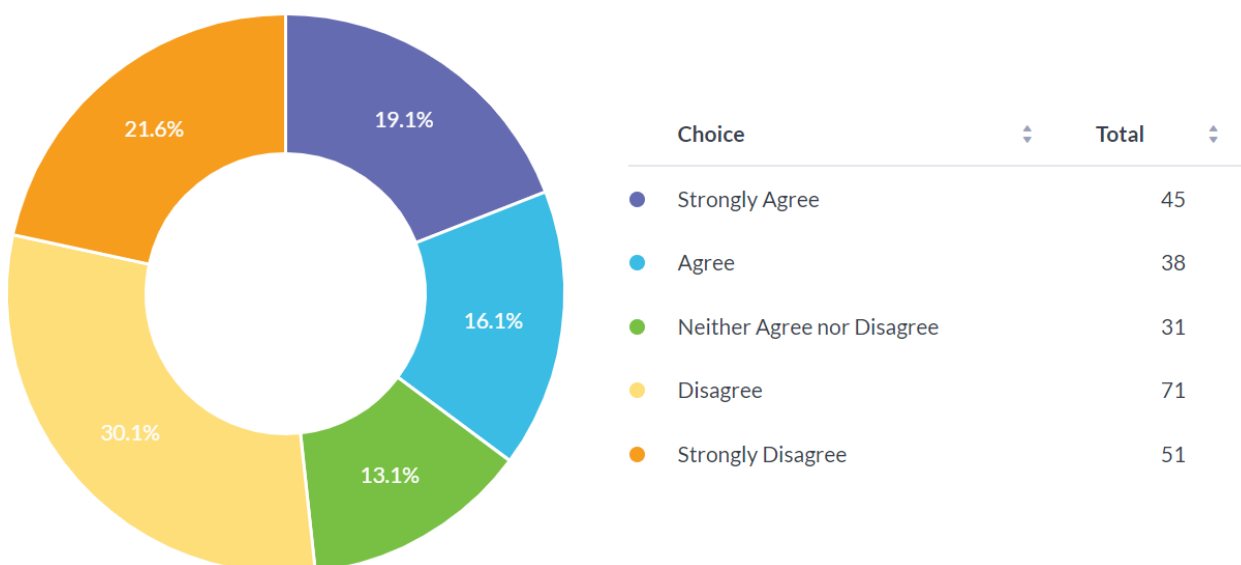
Preparedness Actions

The following questions relate to actions you have taken to prepare for a disaster.

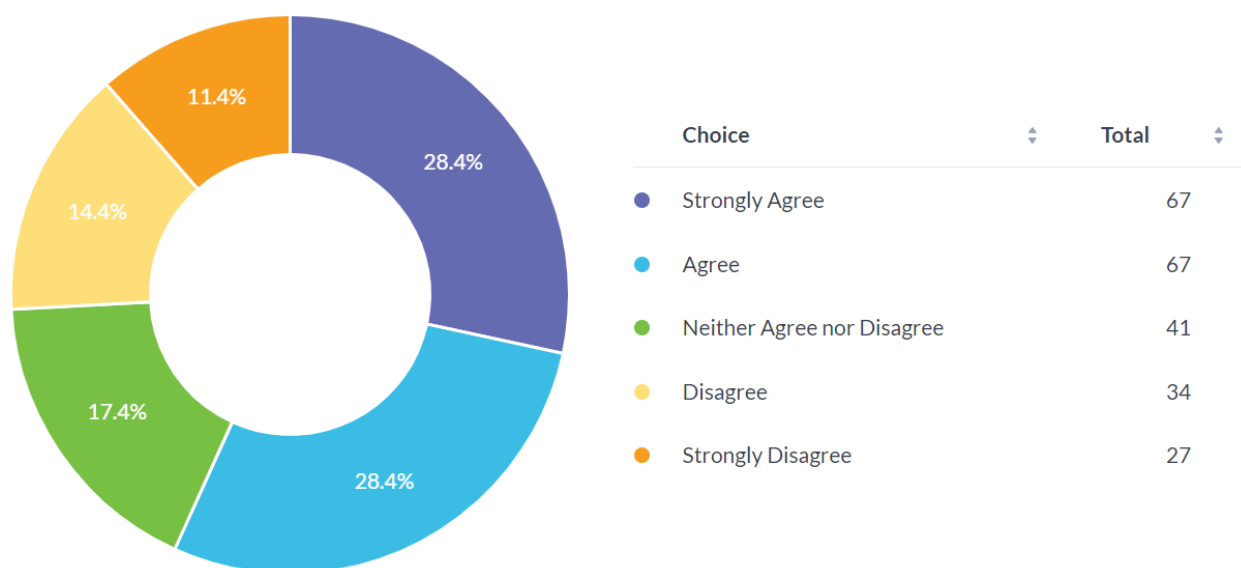
9. I have gathered supplies, such as food, water, and medical supplies, to last three or more days in the event of a major disaster.



10. I have attended a local preparedness meeting or training event, or participated in a local emergency drill.



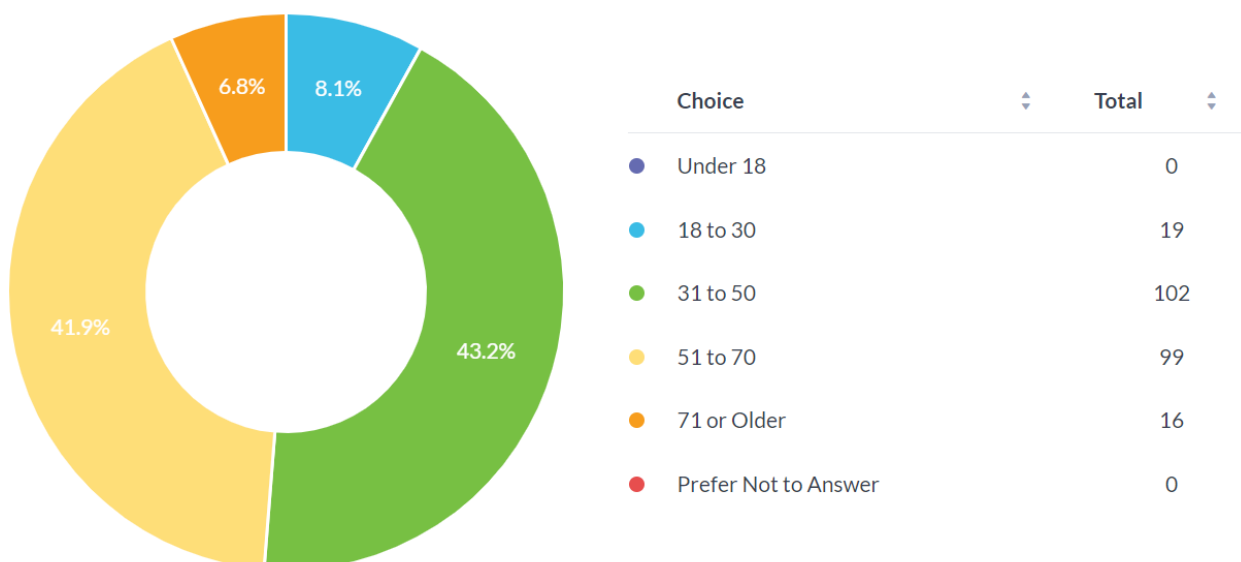
11. I have purchased homeowner's or renter's insurance and have purchased hazard-specific insurance such as flood insurance or earthquake insurance.



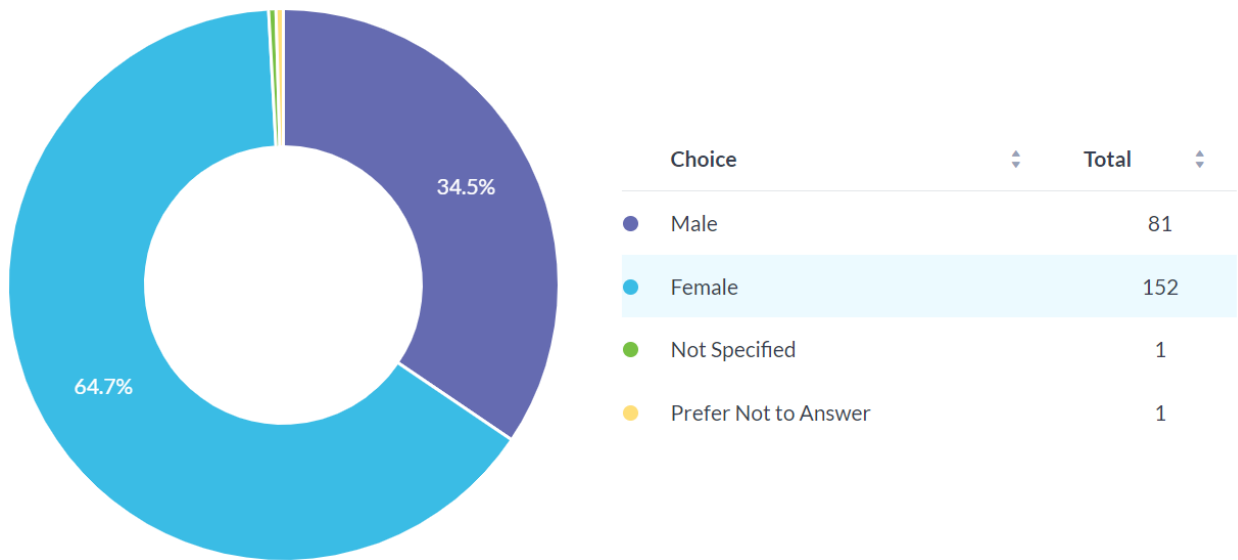
Demographics

The following questions are for demographic purposes only. This information is anonymous.

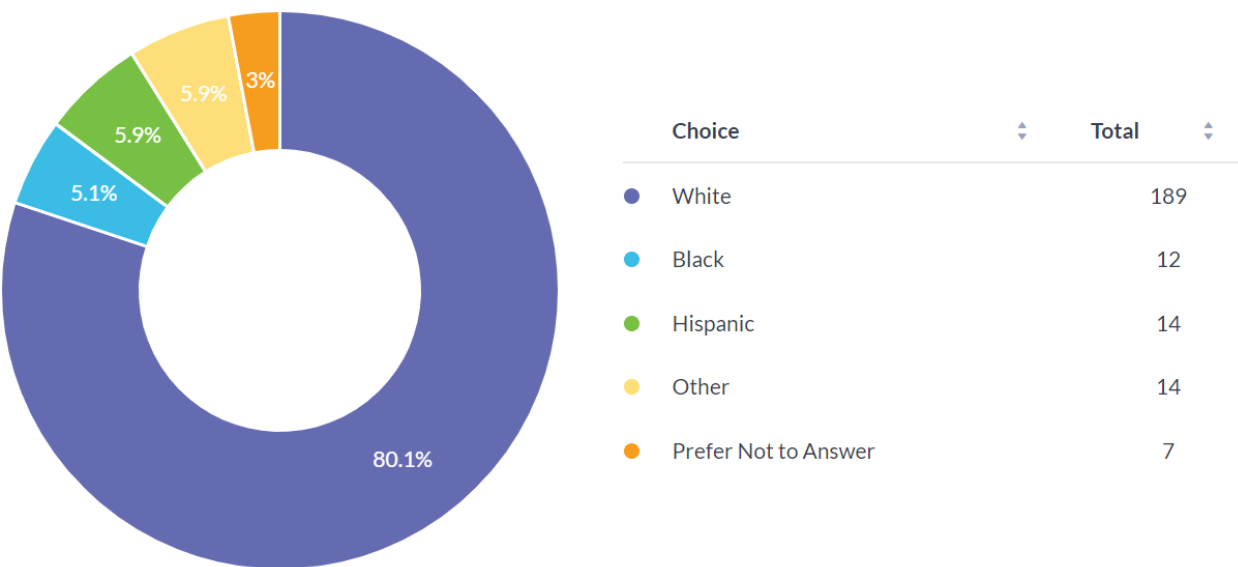
12. What is your age?



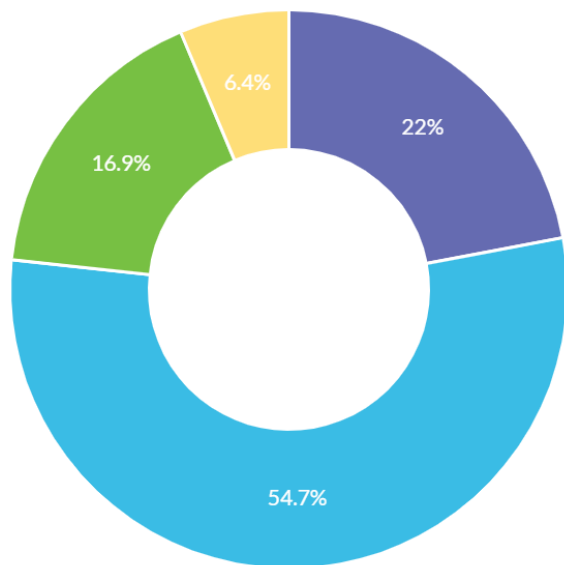
13. What is your gender?



14. What is your ethnicity?

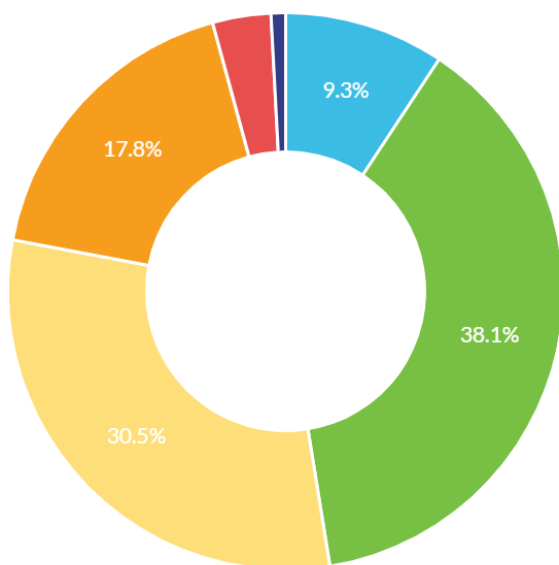


15. What is your approximate annual income?



Choice	Total
Less than \$52,200	52
\$52,200 to 156,600	129
\$156,600 or More	40
Prefer Not to Answer	15

16. What is your highest level of education?



Choice	Total
Some High School	0
High School Diploma or G.E.D.	22
Some College or Tech/Trade School	90
Bachelor's Degree	72
Master's Degree	42
Post-Graduate, Doctoral, or Ph.D. Degree	8
Prefer Not to Answer	2