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The Influence of Bureaucratic Structures on Emergency Management Leaders' Adaptive Responses

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Abstract

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Responses

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Anthony M. Riscica

MBA, College of Saint Rose 2000

BS, Siena College, 1981

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The influence of bureaucratic structures has been shown to affect emergency management leaders' ability to exercise adaptive responses because bureaucracy can constrain the operational effectiveness and facilitate organizational cultures not conducive to supporting adaptive responses. The purpose of this study was to explore the lived experiences of emergency management leaders in catastrophic incidents relative to bureaucratic organizing characteristics. A qualitative interpretive phenomenological analysis informed by complexity leadership theory was used to examine 12 emergency management leaders' lived experiences in a catastrophic incident context. The thematic analysis found bureaucratic structures influenced organizational member behavior and organizational structural adaptation. Participants indicated that their ability to navigate bureaucracy was critical to mitigating the negative effects of bureaucratic structure on adaptive responses. To be effective, participants noted they must balance the implementation of bureaucratic processes for control while also shaping an environment for adaptive responses. Additionally, the context of an emergency influenced participant perceptions of the capabilities and actions required. Study participants indicated relationships and team member experience were critical for achieving successful response outcomes. Based on the findings, recommendations include developing specific training that stresses the organizational system, providing increased understanding of organizational culture to maximize performance, and relationship building. The study contributes to positive social change by providing mechanisms to mitigate bureaucratic processes that could positively influence community resilience.

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Dedication

This dissertation is dedicated to all the emergency management leaders throughout the

United States. Their selfless service to their communities, state, and nation is an inspiration to us

all. They are true American heroes.

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I would like to thank my committee chair, Dr. Howard Schechter's support, responsiveness, and constructive mentorship were instrumental in the dissertation's completion. I also want to thank Dr. LaBrina Jones and Dr. Kenneth Levitt, whose constructive reviews were critical to the dissertation's successful completion. Finally, I would like to thank my family, whose support makes anything possible.

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Chapter 1: Introduction to the Study

Economic and societal costs from the effects of natural disasters in the United States are significant and increasing annually at a greater rate than the gross national product (GNP; Deryugina, 2017; Smith & Matthews, 2015). In consultation with the chief elected or appointed official, emergency management leaders at the local, state, and federal levels are primarily responsible for coordinating response operations to mitigate the effects of natural and human-caused disasters (United States, 2019). Since 2001, catastrophic disasters in the United States have become more complex, requiring emergency management leaders to develop new ways of addressing the challenges confronted by the effects of the disaster (Cantin et al., 2017). This increased complexity is attributed to greater multiagency coordination requirements, time-constrained decision making, conflicting internal and external stakeholder requirements, operational uncertainty, and the dynamic operating environment resulting from the disaster (Albanese & Paturas, 2018).

Bureaucratic structures can negatively influence an emergency management leader's ability to coordinate and exercise adaptive responses (Kapucu & Garayev, 2016). Historically, emergency management leaders' inability to exercise adaptive responses during catastrophic disasters has resulted in operational failures (Amernic & Craig, 2017). As Steigenberger's (2016) literature review suggests, there is minimal research on the influence of bureaucratic structures on decision making in disaster response operations.

In this qualitative, phenomenological study, semistructured interviews were conducted with emergency management leaders operating in the Southeastern United States regarding their lived experiences of bureaucratic emergency management structures' influence on adaptive responses in responding to a catastrophic incident. The study findings provide emergency management leaders with the ability to better understand and develop mechanisms to exercise adaptive responses during catastrophic incidents. As emergency management leaders are confronted with catastrophic incidents, their ability to exercise adaptive responses could have a societal impact by reducing the loss of life and economic severity from the effects of the incident. Chapter 1 addresses the following areas: (a) the background of the study, (b) problem and purpose statements, (c) research question, (d) conceptual framework, (e) nature of the study, (f) key definitions, (g) assumptions, (h) limitations, (i) scope of the study, (j) significance of the study, (k) impact on practice and theory, (l) implications for social change, and (m) a summary.

Background of the Study

Emergency management organizations, characterized by rigid hierarchical, bureaucratic structures focused on control, negatively influence emergency management leader's ability to leverage collaborative networks in the emergency management system required to address the evolving challenges confronted (Kapucu & Garayev, 2016). Traditional bureaucratic structures can impede an emergency management leader's ability to balance formal organizational structure and adaptive behavior required to achieve successful operational outcomes in crises (Stark, 2014). The context of the event, routine

emergency, or catastrophic incident is also a consideration in exploring the phenomenon because of the influence of the context on emergency management leader processes used in the response.

In routine emergencies, bureaucratic organizational structures usually entail hierarchically structured leadership that is expertise-driven where leaders execute responses based on standard operating procedures (SOP) and drills (Howitt et al., 2017). In catastrophic disasters, a leader's reliance on existing SOPs and plans can prove inadequate (Andrew et al., 2018). In comparison to routine emergencies, a catastrophic disaster (a) overwhelms emergency management resources and plans, (b) is less predictable by its very nature, and (c) presents novel challenges (Alexander, 2018; Leonard & Howitt, 2012). As a result, emergency management leaders need to address novel challenges with innovative solutions and exercise adaptive responses (Demiroz & Kapucu, 2012; Stark, 2014; Williams et al., 2017). Therefore, understanding the influence of bureaucratic structures on emergency management leader's adaptive responses in catastrophic disasters is critical for operational success.

The research literature discussed in this study included bureaucratic structures' influence on emergency management leader's ability to exercise adaptive responses during catastrophic incident responses through a complexity leadership theoretical lens. The context of a catastrophic incident is uniquely suited to exploring the influence of bureaucratic structures on emergency manager leader decision making because of the operational stress imposed on the organizational response. The complexity leadership theoretical lens provided a perspective of exploration that focuses on the interaction of

actors to increase understanding of the underlying challenges not always visible on the surface.

Problem Statement

Natural and human-caused disasters are a reoccurring phenomenon within the United States. Effective leadership in coordinating emergency response operations is an important consideration during a catastrophic disaster (Adams & Stewart, 2015). Historically, emergency management leader's inability to exercise adaptive responses during catastrophic disasters has resulted in operational failures (Amernic & Craig, 2017). Successful crisis response operations require leaders to be innovative, adaptive, flexible, and to coordinate emergency management informal operational networks effectively (Resodihardjo, Van Genugten, & Ruiter, 2018). The rigidity of bureaucratic organizational structures typical of emergency management organizations makes adaptive responses critical to operational success during a catastrophic event challenging. As Uhl-Bien & Arena (2018) suggest, bureaucratic organizational structures can negatively influence organizational and individual adaptive responses.

The general problem is that emergency management bureaucratic organizational structures, although acceptable for routine emergencies, can negatively influence adaptive responses during complex catastrophic responses (Ansell & Boin, 2017). The specific problem this study addressed is some emergency management leaders operating in bureaucratic organizational structures in the Southeastern United States may not understand how to exercise adaptive responses necessary for successful operational outcomes during complex catastrophic disasters (Johannessen, 2017; Kapucu & Van

Wart, 2008; Steigenberger, 2016). Based on a literature review, there was a lack of research available exploring the lived experiences of emergency management leaders addressing the influence of bureaucratic structures on adaptive responses during a catastrophic incident.

Purpose of the Study

The purpose of this interpretive phenomenological analysis (IPA) study was to explore the lived experiences of emergency management leaders operating in the Southeastern United States relative to the bureaucratic organizational structure's characteristic of emergency management organizations in catastrophic disasters. Using a complexity leadership theoretical lens to inform the study's conceptual framework, the research focused on exploring the lived experiences of emergency management leaders exercising leadership responding to catastrophic disasters at the county, state, and national level. The study themes identified address techniques emergency management leaders could use to facilitate adaptive responses during catastrophic incidents.

Research Questions

The following three research questions guided the study research:

Research Question 1 (RQ1): What are the lived experiences of emergency management leaders in catastrophic disasters given the bureaucratic organizational structures in which they operate?

Research Question 2 (RQ2): How do emergency management leaders find equilibrium between bureaucratic organizing processes and the need for adaptive responses in catastrophic incidents?

Research Question 3 (RQ3): How does member behavior in bureaucratic structures influence emergency management leader decision making?

Conceptual Framework

The study's conceptual framework was developed based on a review of the literature associated with bureaucratic structures' influence on emergency leader adaptive responses during catastrophic incidents. An emergency management leader's ability to exercise adaptive responses during a catastrophic incident can be influenced by the bureaucratic structure within which they operate. The use of a conceptual framework allowed me to explore the relationship between bureaucratic structures and emergency management leader's understanding of how to exercise adaptive responses in catastrophic incidents. The traditional emergency management bureaucratic structures processes and procedures focused on control can limit emergency management leader's ability to exercise adaptive responses required of catastrophic incidents during response operations (Kapucu & Garayev, 2016). The bureaucratic control mechanisms and the emergency management leader's understanding of how to exercise adaptive responses in catastrophic incidents can be limiting factors in achieving successful operational outcomes.

Complexity leadership theory informed the conceptual framework for this study. Marion & Uhl-Bien (2001) first presented complexity leadership theory to address leadership challenges in an increasingly complex operating environment. Deviating from a traditional reductionist approach, Marion & Uhl-Bien (2001) applied complexity theory to the leadership domain to better understand the underlying interactions that can generate the emergence of novel solutions to the leadership challenges confronted.

Marion & Uhl-Bien (2001) viewed the leader's operating environment as a dynamic complex adaptive system.

The emergency management system in which emergency management leaders operate, with an internal series of subsystems working in collaboration as operating nodes of the larger system, is representative of a complex adaptive system. Uhl-Bien and Arena (2018) suggest the adaptive response process results from the tension between a leader's requirement to innovate and the control required of the bureaucratic organizational structures. As a leader's requirement for innovative adaptive decisions is exercised to address the situations confronted, tension results based on the bureaucratic system pressure to control the organizing processes (Uhl-Bien & Arena, 2018). This conflict is manifested in what Uhl-Bien and Arena (2018) identify in the framework as adaptive space. The objective of operational leaders, as Uhl-Bien and Arena suggest, is to enable adaptive space by facilitating stakeholders or agent's interaction within the system to achieve novel solutions to complex problems. Complexity leadership theory is grounded in informal behavior research developed in the early 1900s and was expanded to include complex adaptive systems in the early 2000s (Uhl-Bien & Marion, 2009). Complexity leadership theory focuses on leadership within a complex adaptive system (CAS; Uhl-Bien, et al., 2007). A CAS is "open, evolutionary aggregates whose components (or agents) are dynamically interrelated and who are cooperatively bounded by a common purpose" (Marion & Uhl-Bien, 2008, p. 193). A CAS is a dynamic system characterized by uncertainty and change in response to the organizational environment (Uhl-Bien & Marion, 2009). The emergency management system is representative of a CAS

(Kontogiannis & Malakis, 2020). This conceptual framework was suitable for exploring emergency management leaders' lived experiences in a catastrophic disaster given the bureaucratic organizing structures they operate within and their need for adaptive responses to novel situations confronted.

Nature of the Study

An IPA approach in the hermeneutic tradition was used for this study. As Moran (2002) suggests, a phenomenological approach examines how individuals experience phenomena. Interpretive phenomenology is well suited for exploring complex topics (Smith & Osborn, 2015). An IPA approach allows the researcher to understand how individuals make sense of complex situations confronted considering the context and operational environment (Alase, 2017). IPA was an appropriate research approach since the research goal was to explore how individuals understand the construct and experience decision making based on context and the challenges confronted (Paterson & Higgs, 2005). An IPA approach was well suited to explore the lived experiences of emergency management leaders confronted with situations requiring adaptive responses associated with catastrophic disasters given the bureaucratic organizing structures within which they operate.

The data collection was accomplished with semistructured interviews of civilian emergency management leaders operating in the Southeastern United States who had experienced a catastrophic incident within the last 5 years. The data was categorized, and thematic patterns identified using NVivo Plus version 12. Purposive sampling was used to select study participants. Twelve emergency management leaders involved in

supporting catastrophic incident response operations within the past 5 years participated in the study. Manson (2010) suggests the sample size for a phenomenological study range from 5-25 interviews. The literature varies on the number of sample interviews required to achieve topic saturation. Smith et al. (2009) suggest an acceptable sample size for traditional IPA studies between 3 and 6 study participants.

The data was analyzed using the six-step IPA methodological framework outlined by Smith et al. (2009). To enable the data analysis, a reflective journal was used within NiVivo 12 Plus. Additional information was compiled from emergency management leader agency websites and public media reports specific to the interviewee's catastrophic incident and organizing processes. Procedures addressing issues of trustworthiness were incorporated throughout the data analysis process.

Definitions

Adaptive response: is a fundamental change in the process implemented by a leader, which results in a change in the relationship between an organization and its ecosystem based on a challenge confronted (Glover et al., 2002; Glover et al., 2002; Northouse, 2018).

Bureaucracy: is a formal organizing structure that is based on a hierarchical leadership structure where power is derived from position and exercised through administrative processes associated with rules and regulations (Simon et al., 2018).

Catastrophic incident: Based on the emergency management leader's perspective, federal, state or county level, an extreme event that causes the collective response

capability to be overwhelmed, resulting in a possible threat to security, economic system, and/or safety of the population (United States, 2019).

Complex Adaptive System (CAS): is an open system that generates adaptive responses through conflict between forces that disrupt and stabilize the equilibrium of the system (Uhl-Bien & Arena, 2017).

Emergency management network: is a grouping of multiple interagency organizational stakeholders the come together to build increased capacity and synergies in response to a catastrophic incident.

Emergency management leader: is a person that is responsible for policy, planning, supporting, or coordinating responses to routine emergencies and catastrophic incidents.

Response: is any activity to save lives, protect property and the environment, stabilize the incident, and meet basic human needs following an incident, including the execution of emergency plans and facilitation of recovery operations (United States, 2019).

Assumptions

The study was based on three assumptions. First, I assumed prospective interviewees were honest and forthcoming in their beliefs and experiences relating to the phenomena without fear of retribution. Second, the number of emergency management leaders who supported a response to a catastrophic incident within the Southeastern United States who were willing to be interviewed was sufficient to achieve saturation. Third, the study participants had the requisite level of experience operating in

bureaucratic structures and the emergency management career field to understand the intent of the interview questions.

Limitations of the Study

The study was not without limitations. First, the study sample population was limited to emergency management leaders operating in the Southeastern United States who had led or supported response operations during a catastrophic incident within the last 5 years. Second, as a result of the sample size, the study findings are not generalizable to other emergency management leaders in different areas of the country. Third, the lack of racial diversity among study participants limited the study by not exploring how race may have influenced the lived experiences of emergency management leaders during a catastrophic incident.

IPA research methodology has been criticized for what are perceived to be limitations of this research approach. First, researchers have called into question the ability of the study participant and the researcher to effectively communicate experiences with the requisite detail to truly understand the meaning of the experience conveyed (Willig, 2013). As Tuffour (2017) suggests, this limitation was overcome by increased diligence in collecting rich and detailed information from the study participants. Second, IPA's focus on understanding the study participant's rich experience is based on their unique perception of the experience, there is no explanation of why the phenomena are happening. As Willig (2013) suggests, IPA is more about the description of individual experiences than why the phenomena are occurring.

Scope and Delimitations

The study was limited to the Southeastern United States. The sample population consisted of emergency management leaders who had been involved in catastrophic incidents within the last 5 years. The study's focus was derived based on a literature review indicating a limited amount of research on emergency management leaders' response to catastrophic incidents and bureaucratic structures. The exploratory nature of the qualitative study precludes transferability to other sample populations.

Significance of the Study

This study contributes to the literature on crisis leadership by exploring the lived experiences of emergency management leader's understanding of adaptive responses in catastrophic disasters given the bureaucratic structures within which they operate. Geir (2016) suggests that even though catastrophic events continue to call attention to leadership challenges, leadership during catastrophic events remains one of the least studied areas in leadership. The study is unique because it focuses on an under researched area of crisis and crisis management (Williams et al., 2017), with a specific focus on emergency management leaders lived experiences viewed through a complexity leadership theoretical lens. Understanding the influence of bureaucratic structures on adaptive responses is essential from a practitioner and societal perspective (Uhl-Bien & Arena, 2018). A leader's ability to exercise adaptive responses can increase response operations' effectiveness by reducing the loss of life, economic impacts, or environmental effects. As Hannah et al. (2009), Kapucu and Van Wart (2008), and Jong et al. (2016) suggest, ineffective leadership in catastrophic events has directly influenced the inability

of emergency management organizations to achieve organizational outcomes successfully. Adaptive responses are critical for success in dynamic complex operational environments, and bureaucratic structures' linear hierarchy and focus on maintaining order can be a limiting factor for leaders (Uhl-Bien & Arena, 2017).

Significance to Practice

Adaptive responses by emergency management leaders have been identified as critical components in achieving successful operational response outcomes (Amernic & Craig, 2017). The study findings provide emergency management practitioners an increased understanding of the relationship between bureaucratic structures, adaptive responses, and complex catastrophic incidents that could be used to develop emergency management leader training programs. The leader training programs could increase understanding of techniques to exercise adaptive responses in bureaucratic organizational documents resulting in more effective operational outcomes.

Significance to Theory

Theories focused on CAS consider the influence of leadership on informal network interactions (Uhl-Bien & Arena, 2018), and that could facilitate novel solutions to complex situations confronted in a given context. The study is significant to theory in two ways. First, the study findings advance complexity leadership theory research by increasing the understanding of the relationship between bureaucratic structures and emergency management leader's understanding of how to exercise adaptive responses in catastrophic incidents. Second, applying a complexity leadership theoretical lens to explore the phenomena advances the understanding of the influence complexity

leadership theory could have on increased emergency management leader's understanding of how to exercise adaptive responses in the context of a catastrophic incident.

Significance to Social Change

The study findings provide emergency management leaders the ability to better understand and develop mechanisms to exercise adaptive responses during complex catastrophic events. As emergency management leaders are confronted with complex catastrophic events, their ability to exercise adaptive responses positively influences response outcomes by reducing the loss of life and economic severity from the effects of the event. As emergency management leaders more effectively mitigate response outcomes, overall community resilience is positively impacted.

<p align="center">**Summary and Transition**</p>

This study explored the lived experiences of emergency management leaders supporting response operations in the Southeastern United States, relating to bureaucratic structures and adaptive responses during catastrophic incidents. Emergency management leader's inability to exercise adaptive responses in a bureaucratic structure during catastrophic incidents has resulted in less effective response outcomes. The conceptual framework for the study explored the relationship between bureaucratic structures and emergency management leader's understanding of how to exercise adaptive responses in catastrophic incidents. An IPA approach was used to explore the lived experiences of emergency management leaders.

Exploring this phenomenon identified areas of future research and further advance the limited research currently identified. The study has significance to practice, theory,

and social change. From a practice perspective, the study provides insight into developing additional emergency management leader training. Applying a complexity leadership theoretical lens to explore the phenomena of adaptive leadership in bureaucratic structures advances the understanding of the influence complexity leadership theory on understanding the study phenomena. An increased understanding of the phenomena could positively impact emergency management system resiliency. Chapter 2 will explain the conceptual framework used in the study, present a detailed review of the literature associated with the influence of bureaucratic structures on emergency management leader adaptive responses, and close with a summary.

Chapter 2: Literature Review

The purpose of this phenomenological study was to explore the lived experiences of emergency management leaders in the Southeastern United States in the context of bureaucratic organizational structures during catastrophic disasters. The general problem is that emergency management bureaucratic organizational structures, although acceptable for routine emergencies, can negatively influence adaptive responses during complex catastrophic responses (Ansell & Boin, 2017). The specific problem this study addressed is some emergency management leaders operating in bureaucratic organizational structures supporting response operations in the Southeastern United States may not understand how to exercise adaptive responses necessary for successful operational outcomes during complex catastrophic disasters (Kapucu & Van Wart, 2008; Johannessen, 2017; Steigenberger, 2016). The literature reviewed suggests a lack of research on emergency management leader's lived experiences addressing the relationship between the influence of bureaucratic structures and their understanding of how to exercise adaptive responses in an emergency management context.

Literature Search Strategy

The literature search strategy used in exploring the research problem and study methodology was focused on obtaining relevant peer-reviewed and seminal research articles. The key concepts found in the study research questions formed the primary basis for developing key terms used in the literature search. A top-down approach was used with the initial search of broad topic areas that, upon review, led to a more refined literature search narrowing in on the research problem's specifics. Based on the research

identified, the search was further refined to identify specific seminal research articles and more recent research addressing the research problem used in the study. The primary time frame used in the search was articles published less than 5 years from the anticipated study completion of 2022. The time frame constraint was not a limiting factor for seminal and other foundational articles designed to identify the literature on the research problem evolution over time. Quantitative and qualitative articles were considered during the literature search of academic and governmental databases.

The search terms used in the research strategy included *adaptive leadership, adaptive responses and catastrophic incidents, bureaucracy, bureaucracy and complex catastrophic incidents, bureaucracy and crisis management, bureaucracy and disaster preparedness, bureaucracy and emergency management, bureaucracy and extreme events, bureaucratic structures, crisis decision making, crisis leadership, complexity leadership theory, crisis management, complexity theory, crisis leadership and catastrophic incidents, Deepwater Horizon, disaster response, disaster management, disaster and bureaucracy, disaster theory, emergency management, emergency operations center, extreme event, Hurricane Katrina, Hurricane Maria, Hurricane Sandy, interpretive phenological analysis research, leadership in bureaucratic structures, 911, organizational adaptation in emergency management, phenomenology, world trade center terrorist attack, qualitative research, transactional leadership, and transformational leadership.*

Multiple databases were accessed to obtain peer-reviewed articles through the Walden University online library and directly through online portals. These databases

included Academic Search Complete, Emerald Insight, ERIC, Federal Emergency

Management Agency, Google Scholar, Harvard University Kennedy School, Homeland

Security Digital Library, ProQuest, PsycARTICLES, SAGE Journals, ScienceDirect,

Thoreau, University of Delaware Disaster Research Center, U.S. Fire Administration,

U.S. Government Accountability Office, Walden University dissertations. Most of the

terms identified were used in searches of the databases. In addition to articles obtained

through database searches, multiple books in the topic areas of emergency management

and phenomenological research were reviewed.

Conceptual Framework

Complexity leadership theory provides the foundation for the conceptual

framework used to explore the relationship between bureaucratic structures and

emergency management leader's understanding of how to exercise adaptive responses in

catastrophic incidents. Uhl-Bien et al. (2007), in response to the lack of leadership

research addressing the complexities of an evolving knowledge-centric economy, were

some of the first researchers to introduce CLT as a leadership research framework

(Brown, 2011; Rosenhead et al., 2019). By examining a leader's ability to facilitate

organizational effectiveness, Marion and Uhl-Bien (2001) posited complexity theory's

application to leadership research could provide an understanding of how to examine

leadership in complex adaptive systems.

Based on complexity theory, Uhl-Bien et al. (2007) posited a complexity

leadership theory that characterizes organizations as complex adaptive systems. Uhl-

Bien et al. (2007) suggested complexity leadership theory examines leadership behaviors

that can enable the organizational system and network participant's ability to innovate and adapt by influencing the operational networks within bureaucratic organizing structures. Uhl-Bien et al. (2007) suggested a model of CLT with three leadership functions (a) administrative leadership, based informal control structures, (b) enabling leadership, actions that set conditions to facilitate adaptive leadership in the organizational complex adaptive systems, and (c) adaptive leadership, sets conditions for organizational adaptability and innovation based on social network interaction within the complex adaptive system. Uhl-Bien et al. (2007) suggested that each of these functions coexist in an intertwined relationship where the formal administrative, informal adaptive, and enabling functions interact toward equilibrium with a goal of increased organizational efficiency. Uhl-Bien et al. (2007) suggest a central role for enabling leadership is to facilitate the organizational systems movement toward equilibrium.

In Uhl-Bien and Arena's (2018) cross-disciplinary literature review on organizational adaptability, the authors built upon the previous work of Marion and Uhl-Bien (2001), Uhl-Bien et al. (2007), refined the leadership functions of CLT and posited a complexity leadership framework of leadership for organizational adaptability. In the framework (a) adaptive leadership is relabeled as entrepreneurial leadership, focused on those leadership actions designed to create innovative solutions to complex problems, (b) administrative leadership is relabeled as operational leadership, focused on traditional bureaucratic leadership functions, and (c) enabling leadership facilitates the development of adaptive space, focused on "creating structures and processes" p.98 to facilitate organizational adaptability. Uhl-Bien and Arena (2018) suggest a significant implication

from their study findings is an over-emphasis of scholarly research focused on organizational performance, without sufficient exploration of the relationship between organizational performances and organizational adaptability.

In catastrophic incidents, emergency management leaders exercise leadership in dynamic, nonlinear, operating environments filled with uncertainty and complex stakeholder networks representative of a complex adaptive system (Comfort et al., 2019; Denham & Baker, 2019; Hodges, 2018). Most emergency management leaders exercise leadership during response operations through formal bureaucratic structures with defined processes for planning, operations, and command and control (United States, 2019; Whittaker et al., 2015). Bureaucratic structures can influence an emergency management leader's ability to facilitate adaptive responses and achieve successful operational outcomes (Takeda et al., 2017). The effects of catastrophic incidents result in a punctuated change that requires emergency management leaders to exercise adaptive responses to meet the novel challenges confronted (Quarantelli et al., 2018). The emergency management leader exercising adaptive responses in the context of a catastrophic incident would suggest, based on the complexity leadership framework of leadership for organizational adaptability, their use of an enabling leadership style (Uhl-Bien & Arena, 2018).

In an emergency management context, conflict results from the tension caused by the formal bureaucratic operational structure's influence and the need to exercise adaptive responses required for successful response outcomes (Carlson et al., 2017; Uhl-Bien & Arena, 2018). In the emergency management ecosystem, emergency management

leaders must create an environment that brings together network stakeholders within the system to achieve desired outcomes (Comfort et al., 2019; Paturas et al., 2016). Leadership behavior, not positional leadership within an organization, fosters a conducive environment for network participant interaction resulting in the emergence of novel solutions (Lichtenstein & Plowman, 2009). Emergency management leader's ability to exercise adaptive responses can be limited by the emergency management system's bureaucratic structures.

The lack of leadership research on the influence adaptability has on organizational performance identified by Uhl-Bien and Arena (2018) is also applicable to leadership research in the emergency management domain. Comfort et al. (2019) suggest emergency management literature has focused on three areas when considering catastrophic incidents performance, information technology, and network analysis. A researcher should consider the effect of performance and the need for organizational adaptability as a catalyst for achieving organizational outcomes (Uhl-Bien & Arena, 2018).

A growing number of public sector administrators and leadership researchers have suggested traditional leadership models do not fully explain leadership in a dynamic complex operating environment (Murphy, et al., 2017). In Brouillette and Quarantelli's (1971) seminal article that considers complex organizations under stress, the authors suggested bureaucratic organizing models are not effective in understanding how organizations adapt to environmental stressors in an emergency management context.

Leadership research has not focused on the leader skills associated with the management of adaptive organizations (Uhl-Bien & Arena, 2018; Rosenhead et al., 2019).

Uhl-Bien and Arena's (2018) research implications indicate there needs to be more research on how leaders enable organizational adaptability in a CAS. Denham and Baker (2019) suggest there are limited studies of the components within the emergency management system through CAS's lens. Denham and Baker (2019) suggest exploring the emergency management system through a CAS lens would increase understanding of the emergence of new structures outside the central bureaucratic control that emerge during a catastrophic incident. Using a CAS lens could facilitate the identification of emergent groups that could increase response effectiveness if integrated into response efforts.

Chen, Zhang et al. (2020), literature review identifies only two areas where CAS were applied in emergency management research. First, from the aspect of a socioecological system (Smith et al., 2011). Second, from the context of managing an emergency management response (Chen et al., 2020). A limited number of empirical studies apply CLT to organizational settings (Tourish, 2019) or the influence of bureaucratic structures on emergency manager adaptive responses in a catastrophic incident (Christensen et al., 2016; Comfort et al., 2019). Therefore, the complexity leadership framework of leadership for organizational adaptability application to the emergency management domain is uniquely suited when considering the influence of bureaucratic structures on leader adaptability in the context of a catastrophic incident. This study will explore the gap in literature addressing emergency management leaders

understanding and ability to exercise adaptive responses, given bureaucratic organizing structures, in the context of a catastrophic incident.

Literature Review

Context of an Extreme Catastrophic Incident

There is a significant distinction between the operational context of a catastrophic incident and a routine emergency (Kapucu & Demiroz, 2017). The contextual distinction between catastrophic incidents and routine emergencies is a consideration in disaster research because of the difference in their effects on societal systems and emergency management leader requirements necessary to achieve successful operational outcomes. Hannah et al. (2009) suggest the operational context of extreme incidents are characterized by (a) large scale negative effects on societal and organizational norms, (b) overwhelming disruption of societal systems and organizational structures, and (c) significant disruptions in societal and organizational resiliency. In a catastrophic incident, the emergency management system is subject to a dynamic punctuated change that degrades the system's ability to function as intended (Broska et al., 2020).

In catastrophic incidents, the greater degree of complexity, uncertainty, and disruption of societal systems requires emergency management leaders to exercise leadership differently than in routine emergencies (Demiroz & Kapucu, 2012; Kapucu & Van Wart, 2006; Takeda et al., 2017). In routine emergencies, the emergency management system is not overwhelmed, and the incident effects can be mitigated by emergency management leaders executing plans or SOPs (Nohrstedt, 2016; Jiang & Yuan, 2019). The lesser degree of disruption to the societal and emergency management

systems in routine emergencies reduces the need for extensive emergency response management. In catastrophic incidents, emergency management leaders need to enable the emergency management network stakeholders to adapt their networks to achieve successful outcomes in response to the novel challenges confronted (Wukich & Robinson, 2013). A challenge for the emergency management leaders is balancing the need for situational control and organizational adaptation during the response to catastrophic incidents. Maintaining an effective equilibrium between competing processes is critical for effective emergency management response operations. Emergency management leader's ability to balance bureaucratic organizing processes and the need for adaptive responses within the emergency management system continues to be identified as a challenge among scholars contributing to unsuccessful operational outcomes (Oh & Lee, 2020).

The literature identifies a unique set of operational challenges facing emergency management leaders compared to routine incidents. The increased level of uncertainty, complexity, and magnitude of effects on social systems can overwhelm organizational processes and procedures. A critical factor in achieving required response outcomes is the emergency management leader's ability to overcome the bureaucratic barriers within the emergency management system and exercise adaptive responses through a balanced approach.

The Emergency Management System

The emergency management system today has evolved based on political and societal stakeholder reaction to the effects of the most recent catastrophic incident and

not a function of methodical planning for possible future threats (Cutter, 2019; Roberts,

et al., 2020). Cutter (2019) suggests emergency management has been defined by (a)

reactive legislation implemented to solve challenges identified in the last catastrophic

incident, (b) shifting prioritization of emergency management, (c) the inability of

emergency management leaders to learn from past mistakes, and (d) a disproportional

impact on the disadvantaged communities. The lack of an anticipatory planning

construct, reactive legislative action, public sector bureaucracy (Roberts et al., 2020), and

emergency management leaders' failure to implement disaster researcher findings

(Harrald, 2020) contribute to reduced emergency management systems effectiveness. In

this increasingly challenging environment, an emergency management leader's ability to

successfully coordinate and collaborate with stakeholders has continued to grow more

complex with each catastrophic incident (Light, 2011; Roberts et al., 2020).

As the emergency management system transitions from typical day to day to

catastrophic incident operations, the increase in requirements can reduce its effectiveness.

This decrease in system effectiveness can reduce the effectiveness of the response.

Comfort et al. (2019) suggests that an emergency management leader's ability to manage

this transition can be challenging and negatively influence operational outcomes.

The establishment of the emergency management system has not followed a

detailed process designed to evolve to a desired end state, contributing to ineffective

response efforts. This lack of detailed planning in the formulating of institutional

processes has negatively influenced emergency management leader response execution.

As the number and complexity of catastrophic incidents continue to grow, the debate on

how best to balance governance structures for responding to catastrophic incidents continues to be a consideration for scholars and practitioners.

Emergency Management Governance Structure

In the absence of a catastrophic incident, emergency management response organizations operate within the traditional bureaucratic structures' boundaries during routine daily operations (United States, 2019; Whittaker et al., 2015). A catastrophic incident brings about a punctuated change stressing organizational processes that trigger the organization's requirement to adapt to meet the challenges confronted (Bănică et al., 2020). The emergency management leader's ability to enable organizational processes to adapt based on the challenges confronted while balancing the bureaucratic processes rigidity can positively influence the response's effectiveness.

Organizing structure is a consideration when determining crisis response effectiveness (Christensen et al., 2016; Rodríguez-Espíndola et al., 2018). The most effective governance structure in a catastrophic incident has been the subject of scholarly debate (Nowell et al., 2018). Researchers have primarily posited two positions to effectively manage catastrophic incidents (Marcum et al., 2012). The traditional bureaucratic command and control structure and a more decentralized network approach. Some scholars have argued that the defined roles and responsibilities that a bureaucratic governance structure provides strengthens the emergency management system by providing mechanisms for organizational learning, and bureaucratic processes can facilitate decision making in periods of uncertainty (Moynihan, 2008b). Bureaucracy also can bring control to chaos during response operations. Moynihan (2008a) suggests

bureaucracy can increase response effectiveness by providing centralized control and structure.

The case for a more decentralized approach is rooted in the need for organizational adaptability and flexibility in periods of uncertainty. Kapucu et al. (2010) suggest an abundance of literature highlighting how the lack of organizational adaptability can negatively influence effective responses. One of the primary causes of response failures during Hurricane Katrina was the bureaucratic structures' inability to adapt effectively to the overwhelming challenges confronted (Bier 2006; Boin et al., 2020). The emergency response system can be overwhelmed by an inability of centralized governance structures to adapt and reach the scale necessary to effectively respond to catastrophic incident effects (Newall et al., 2018). A level of organizational flexibility and adaptability is required to achieve successful response outcomes in catastrophic incidents (Comfort, 2007; Kapucu, et al., 2010; Kapucu & Garayev, 2016). An emergency management system solely based on a hierarchal structure, with a top-down approach to command and control, can degrade effective outcomes in dynamic, uncertain operational environments (Kapucu & Garayev, 2016; Roberts et al., 2020).

As indicated by the previous researchers, each governance structure has its unique set of benefits and challenges that have to be considered by emergency management leaders. Each of the organizing structures coexists in the emergency management system during a catastrophic incident. A consideration for emergency management leaders is how to achieve equilibrium in response efforts between the bureaucratic centric emergency management organization and the need for a more decentralized

organizational adaptation. Balancing the two organizing structures is a critical component for increased response effectiveness as the organization transitions from routine operations to catastrophic response (Comfort et al., 2019).

Organizational Adaptation within the Emergency Management System

The Disaster Research Center (DRC) of the University of Delaware has developed one of the first topologies for examining groups and organizational adaptation in a disaster management context identified in the literature as the typology of organized disaster response (Brouillette & Quarantelli, 1971; Dynes & Aguirre, 1979; Kreps & Bosworth, 2007; Quarantelli & Dynes, 1977). The topology is still relevant and used by researchers examining organizational engagement in a disaster context because it provides an effective mechanism for evaluating the characteristics of organizations responding to a catastrophic incident (Kreps & Bosworth, 2007; Linnenluecke & McKnight, 2017; Quarantelli & Dynes, 1977; Strandh & Eklund, 2018). The research provides empirical data that, when confronted with a catastrophic incident, bureaucratic structures will need to adapt based on stressors in their operating environment.

The topology characterizes organizations by old and new structures executing old and new tasks (Strandh & Eklund, 2018). The topology assists in identifying different types of groups that should be considered by emergency management leaders as response operations expand to meet the increased operational requirements associated with the effects of a catastrophic incident (Quarantelli & Dynes, 1977; Strandh & Eklund, 2018; Whittakar et al., 2015). Two seminal studies on organized disaster response conducted by Brouillette and Quarantelli (1971) and Quarantelli and Dynes (1977) consider the

relationship between bureaucratic, structural adaptation, and organized response in a disaster context. This seminal research provides the foundational underpinnings for studies on organizational adaptation that have followed.

Brouillette and Quarantelli (1971) considered complex organizations under stress in an emergency management context. The authors suggested informal structures are not substituted for formal structures as a response to internal and external organizational stressors. Both structures coexist within the system during a catastrophic incident response. Brouillette and Quarantelli (1971) posited that the degree of adaptation from traditional day-to-day operations is positively related to the organizational system's level of stress from the external operating environment. As the catastrophic incident evolves, so does the required adaptation level needed to meet to novel challenges confronted. In their qualitative study, Brouillette and Quarantelli (1971) used field data from the Disaster Research Center during this time period at Ohio State University to evaluate complex organizations responding to 70 natural disasters. Brouillette and Quarantelli (1971) posited a model of bureaucratic adaptation to organizational stress. The model identifies four types of organizational adaptation (a) Type I, represents a minimal change to the organizational structure, response operations are executed within regular tasks, (b) Type II, the organizational structure was modified to add additional personnel and capability, but the tasks performed remained the same, (c) Type III, the structure remained the same, but the tasks changed in response to the effects of the incident, and (d) Type IV, both the organizational structure adapted, and the tasks changed to meet the challenges confronted.

Brouillette and Quarantelli (1971) findings suggested (a) bureaucratic organizing structures are inadequate during periods of extreme stress and go through an adaptation process that does not replace the formal structure but adapts to meet the challenges confronted, (b) leader perceptions influence the extent of adaptation, (c) the degree of stress on organizational members is related to increase in organizational adaptation, and (d) the higher the degree of autonomy in an organization the greater the degree of adaptation in its subunits before an adaption of the parent organization. The bureaucratic adaptation model applies to most bureaucracy organizations in an emergency management context based on data from several hundred organizations facing crises (Brouillette & Quarantelli, 1971).

The model suggested by Brouillette and Quarantelli (1971) considers organizational adaptation on a continuum of the effects of organizational stress. Type I can be associated with a routine emergency. As the complexity and disruption to societal systems increase, the organization evolves to confront the challenges and patterns of their responses through Type II, Type III, and Type IV structural adaptations. Brouillette and Quarantelli (1971) identified that during periods of organizational stress, more adaptive processes can be incorporated into the bureaucratic system.

Parker, et al. (2020) study findings support the bureaucratic adaptation model. The authors found as the effects of the catastrophic incident increase, so do the need for organizational adaptation to support interagency stakeholder collaboration. Bureaucratic organizational adaptation is not without its challenges. Specifically, the hierarchical positioning of leadership in bureaucratic organizing structures can facilitate

misunderstandings on the division of labor for the catastrophic incident response (Parker et al., 2020).

Bureaucratic organizing structures can create barriers to effective incorporation of interagency and emergent groups into response efforts. Organized and emergent groups within the emergency management system add to the level of response complexity and emergency management leaders' requirement to exercise adaptive responses and operational flexibility (Strandh & Eklund, 2018). Whittaker et al. (2015) suggest that the level of acceptance and group participation in response operations is primarily dependent on the formal response agency organizational structure. The rigidity of a bureaucratic structure associated with emergency management organizations can limit response outcomes because of the lack of adequate inclusion of groups, especially emergent groups, in the overall response effort (Dynes, 1994; Whittakar et al., 2015).

Dynes and Quarantelli (1977), expanding the field study data to consider group types and problems that groups encounter in a disaster context. The qualitative study was a compilation of data from 200 field studies by the Disaster Research Center of Ohio State University. The authors suggested a topology with four types of groups based on their status as established or emergent groups. Dynes and Quarantelli's (1977) model identifies four types of groups (a) Type I, established groups in bureaucratic structures executing within regular tasks, i.e., first responders, (b) Type II, expanding organizations that perform within their routine tasks, but the structure adapts, these primarily volunteer organizations that have a latent emergency response responsibility during disasters, i.e., Salvation Army volunteers providing meals, (c) Type III, extending organizations, an

established group with the same structure executing non-regular tasks that may be new to their core functions; i.e., homebuilder performing debris removal operations with excavators, and (d) Type IV, an emergent group, that did not exist before the disaster, with new structures executing non-regular tasks, i.e., multi-agency task force coordinating response operations. Dynes and Quarantelli (1977) suggest the disaster severity determine the level of existence of all four groups and one of the significant challenges to the groups in a disaster is establishing organizational boundaries.

A limitation of the DRC topology identified by Strandh and Eklund (2018) is the topologies focus on tasks and structures without considering the influence of actor motivations on emergent group establishment. An additional emergency management leader challenge drawn from the topology is the need for coordinating the integration of groups based on functions into the overarching response framework when many of the groups, especially expanding and emerging groups, are not directly in the emergency management leaders' organizational structure (Stallings & Quarantelli, 1985; Strandh & Eklund, 2018; Whittakar et al., 2015). In most catastrophic incidents, emerging groups will be present and engage in response operations (Strandh & Eklund, 2018; Twigg & Mosel, 2017; Whittakar et al., 2015). The bureaucratic command and control model of most emergency management agencies does not support integrating emergent groups into response operations (Twigg & Mosel, 2017). To increase response effectiveness, the emergency management leader and the overall system will have to adapt and improvise to incorporate emergent groups.

The DRC's seminal work on organization and group behavior has provided the researcher with a mechanism to examine organized behavior in a catastrophic incident context (Schmidt, et al., 2018). The DRC topology application allows exploring bureaucratic structure adaptation based on environmental factors that are part of the emergency management network. As the emergency management leader reacts to organizational stress during a catastrophic incident, a desired operational end state is creating novel solutions to the complex problems generated by those stressors. The emergency management leader must manage the organizational adaptation in a dynamic operational environment during increased uncertainty to achieve successful operational outcomes. The emergency management leader must operationalize the organizational adaptation process by including all stakeholders, including emergent groups, into the emergency management system. This process is often extremely challenging for emergency management leaders because of the barriers put in place by bureaucratic processes.

Influence of Bureaucratic Structures on the Emergency Management System

Most emergency management agencies in the public sector are based on a bureaucratic organizational model (United States, 2019; Whittaker et al., 2015). Weber's seminal research on bureaucratic organizational structures suggests bureaucracies are typified as having (a) defined rules and regulations based on a hierarchical organizing structure, (b) codified operating processes and procedures, (c) clearly defined roles and responsibilities, and (d) positioning within the hierarchical structure is ideally based on expertise and merit (Hall, 1963; Martela, 2019; Sager & Rosser, 2009; Weber, 1978). An

entity's organizing structure can influence organizational effectiveness, especially in periods of uncertainty.

A key characteristic of a catastrophic incident is a high degree of uncertainty (Sawalha, 2018). Leadership in bureaucratic structures attempts to reduce uncertainty and complexity caused by a punctuated change to the organizational system by implementing rules and processes designed to bring control to the situation (Christensen et al., 2016; Gil-Garcia, et al., 2016). Within bureaucratic structures, emergency management leaders must understand how to adapt organizational stakeholders and networks to achieve successful organizational outcomes without moving to control as the primary alternative. A bureaucratic organizing model can limit organizational adaptability, flexibility, and response operations effectiveness during catastrophic incidents (Wukich & Robinson, 2013). Interagency coordination, a critical component of an effective response, can be negatively influenced by bureaucratic processes. As Oh and Lee's (2020) systematic review of emergency management literature found, bureaucratic organizing structures can negatively affect interagency coordination during response operations. The ridged bureaucratic processes in place fail to allow the effective inclusion of interagency stakeholders.

Takeda and Helms (2006a) examined the bureaucratic emergency management system response model using a catastrophic tsunami response impacting India, Sri Lanka, Thailand, and Indonesia in December of 2004 as a case study. The study was later repeated as a separate case study by Takeda and Helms (2006b) to examine the

bureaucratic emergency management system response model used in response to the effects of Hurricane Katrina in the South-central United States in 2004.

Takeda and Helms (2006a) and Takeda and Helms (2006b) findings suggested the bureaucratic management system model is not effective in operational contexts where the system is subject to a significant punctuated change, response efforts are overwhelmed, response execution times are constrained, and adaptability is critical for operational success. In both studies, the authors found the bureaucratic model was ineffective because of three primary determinants. First, Takeda and Helms (2006a, 2006b) suggested the bureaucratic system used had an over-reliance on decentralized knowledge exchange with centralized decision making. The decentralized knowledge exchange process requires numerous stakeholders to exchange information at functional levels before multi-level information can be provided to a centralized point for decision making (Takeda & Helms, 20006a; 2000b). This protracted decision-making process limits the system's ability to rapidly adapt to a dynamic environment (Takeda & Helms, 2006a, 200b). Takeda and Helms (2006b) cite decision making in Hurricane Katrina as an example where a slow bureaucratic system decision process took five days after the Louisiana governors accepted National Guard support from New Mexico before the federal government approved the request. Second, Takeda and Helms (2006a, 2006b) suggest the bureaucratic system promulgates flawed decision making because of the lack of consideration of external information.

In a bureaucracy, management exercises leadership based on the "socialization of system rules and procedures" (Takeda & Helms, 2006a, p.406). The leadership style

results in an organizational culture where acceptable follower behavior for problem-solving is based on the traditional approaches to problem-solving accepted by the system management (Takeda & Helms, 2006a, 2006b). External information influencing the situation is not considered in determining alternative solutions that limit adaptive behaviors. Takeda and Helms (2006b) cite the catastrophic tsunami impacting India, Sri Lanka, Thailand, and Indonesia as an example of a system that fails to accept external information and outside help. The bureaucratic system leadership faced with significant medical personnel and supply shortages needed for the tsunami victims refused to accept foreign aid. This refusal made it extremely difficult for aid works to support response efforts. Third, Takeda and Helms (2006a, 2006b) identify the leader and follower over-commitment to failed courses of action as contributing factors to response failure.

Takeda and Helms (2006a, 2006b) posit bureaucratic processes and procedures instills in organizational stakeholders a strong commitment to follow the designated course of action the systems management has deemed appropriate, even if the course of action is ineffective. Takeda and Helms (2006b) cite as an example during Hurricane Katrina President Bush's actions. President Bush, even as the hurricane was overwhelming the flood mitigation measures one day after landfall in New Orleans, continued to maintain his public schedule instead of changing his schedule to remain in Washington, D. C. to facilitate adjustments to response efforts that were not effective (Takeda & Helms, 2006b).

The study findings suggest cultural or national boundaries do not limit the deficiencies identified in the bureaucratic system. The studies conducted by Takeda and

Helms (2006a, 2006b) support the challenges of using the bureaucratic system approach in a catastrophic incident identified previously by researchers. In both studies, Takeda and Helms (2006a, 2006b) suggests that making the bureaucratic system more adaptable includes focusing on outcomes, not objectives, and incorporating informal structures into the response efforts.

Jovita and Nurmandi (2018), like Takeda and Helms, 2006a; 2006b, posit that bureaucratic processes limit effective response operations. Jovita and Nurmandi's (2018) article attributes successful organizational outcomes to emergency management leaders' ability to operationalize information within the supporting disaster management networks effectively. Jovita and Nurmandi (2018) posit a barrier to an emergency management leader's ability to exercise adaptive leadership is an organization's bureaucratic organizing structure. Jovita and Nurmandi (2018) identify this phenomenon as bureaucratic inertia. Jovita and Nurmandi (2018) define bureaucratic inertia as the inability of public institutions leadership to effectively respond to catastrophic incidents because of the limitations imposed by bureaucratic processes. Bureaucratic inertia suggests that the organizing structure of a bureaucracy facilitates a cultural behavior of risk and adaptive response avoidance because of the fear of violating established protocols within the organization (Jovita & Nurmandi, 2018). The limitations of the bureaucratic model identified by Takeda and Helms (2006a; 2006b) and bureaucratic inertia posited by Jovita and Nurmandi (2018) are supported by Jung et al. (2018), Jin, and Song (2017) and Tang et al. (2018) study findings.

Tang et al. (2018) examined intergovernmental and cross-sectoral collaboration during a significant incident in China. Tang et al. (2018) study's aim was to suggest possible improvements to the centralized political-administrative Chinese emergency management system, which governs the intergovernmental and cross-sectoral collaboration networks. Tang et al. (2018) conducted a case study using a mixed-method approach that consisted of an extensive document review including response plans, newspaper reports, situation reports, the official accident investigation report, along with eight interviews of key emergency management leaders involved in the Qingdao City, China oil pipeline explosion. Tang et al. (2018) suggests that governance structure influences emergency management network performance. Tang et al. (2018) study findings suggest the centralized political-administrative Chinese emergency management system needs to (a) integrate not-for-profit and private sector organizations into the emergency response structure, (b) increase levels of support of emergency management leaders responding at the local level, (c) balance the centralized emergency response system by including more adaptive structures, and (d) increase their degree of horizontal coordination and collaboration among emergency management functional groups.

The study findings suggest that although the centralized political-administrative Chinese emergency management system's hierarchical structure can facilitate intergovernmental and cross-sectoral collaboration, the structure's bureaucratic mechanisms also limit emergency management network effectiveness. As Tang et al. (2018) suggest, the system effectiveness is dependent on the appropriate blend of bureaucratic structures and emergent adaptive structures.

Jung et al. (2018), in their study of the Sewol ferry sinking in South Korea, considered how the influence of bureaucratic and adaptive approaches influenced crisis management policy during initial response operations. In the study, Jung et al. (2018) used content and semantic network analysis by evaluating 187 documents associated with the government's emergency management approach to responding to the effects of the Sewol ferry sinking. The Jung et al. (2018) study findings suggested (a) based on the over-reliance of bureaucratic structures and decision making processes during the initial response operations, the South Korean emergency management system lacked the adaptability needed to deal with the fast-moving complex situation, (b) the hierarchical approach based on behaviors that instilled a requirement to follow detailed plans, failed to consider evolving requirements and adaptive approaches to the novel complex situations confronted, and (c) an adaptive approach to emergency response operations should always be considered in an emergency management system response.

Jin and Song (2017) examined the Sewol ferry sinking in South Korea from a bureaucratic accountability perspective to increase understanding of the systematic causes that limited the effectiveness of the Korean Coast Guard (KCG) response efforts. Jin and Song (2017) used a bureaucratic accountability framework in reviewing documents, reports, and surveying 280 members of the Korean Coast Guard. Jin and Song (2017) study findings suggest the organizational culture shaped by the bureaucratic organizing structure did not enable adaptive or discretionary actions by members of the KCG, adherence to rules and regulations was more critical than adapting to the challenges confronted by the sinking vessel, the KCG succumbed to political pressure by

diverting resources to address maritime enforcement instead of having the requisite number of ships in the inland waterways for emergencies. Jin and Song's (2017) study suggests, as with other researchers, that the bureaucratic organizing structure can influence member behavior.

The culture within an organization based on a bureaucratic organizing structure can also be a limiting factor in organizational and member adaptability because of the influence of the culture on behaviors. (Jin & Song, 2017; Jung et al., 2018; Takeda & Helms, 2006a, 2006b). As Rivera, 2014 suggests, the leadership of emergency management bureaucratic structures should create a culture where management accepts innovation and adaptation to complex situations confronted. The Federal Emergency Management Agency (FEMA), one of the largest bureaucratic emergency management organizations, despite recommendations to increase efficiency and effectiveness by experts, has been perceived by the public in catastrophic incidents as lacking timeliness in achieving successful outcomes, especially in vulnerable communities (Rivera, 2014; Rivera & Landahl, 2019). The institutional bureaucratic processes dictate how FEMA will provide services during response operations and the network of organizations that must adhere to the processes because they rely on FEMA for funding and support (Rivera, 2014). An organizational culture that is resistant to change or adaptation based on employee or external recommendations can limit response effectiveness even though there is an outward appearance of change acceptance, as evidenced in the Rivera and Landahl (2019) study.

Rivera and Landahl's (2019) study examined contextual factors that influence public entrepreneurship in the Federal Emergency Management Agency. Rivera and Landahl (2019) examined employee perceptions of whether FEMA's organizing structure provided the necessary environment to facilitate acceptance of innovative solutions to enhance processes and procedures designed to achieve increased effectiveness in FEMA organizational outcomes. Innovation has been identified as positively influencing the effectiveness of response outcomes and community resilience after a disaster (Rivera and Landahl, 2019). The authors conducted a quantitative study with a sample size of 1,513 FEMA employees out of a possible sample population of 13,745.

Rivera and Landahl, 2019 study findings suggest that although FEMA is perceived by employees to accept innovation, in reality, there are boundaries imposed. However, Rivera and Landahl (2019) indicate the level of acceptance and implementation of innovative employee ideas is bounded by current regulations and processes established with the bureaucracy. Management acceptance of innovative ideas is, in most cases, not accepted outside of those boundaries (Rivera & Landahl, 2019). The authors identified an area of future research was to determine the gap between management tacit acceptance and the actual execution of innovative ideas proffered by employees. When an organizational culture limits innovation to the boundaries of the organization's bureaucratic processes, system adaptability will be limited, resulting in a less effective system in contexts where adaptation is critical for successful outcomes.

Bureaucratic organizing structures can also negatively influence stakeholder coordination within the system. Steigenberger (2016) suggested one of the challenges

with disaster responses in the United States is interagency coordination. Steigenberger (2016) used a modified version of the 4C framework in conducting a systematic literature review of 80 empirical studies focusing on multi-agency response coordination to identify areas critical to successful response outcomes.

Steigenberger's (2016) analysis suggested (a) planning for smaller-scale incidents could rely on centralized structures with minimal interagency coordination, and the converse is true of larger-scale events, (b) effective plans identify stakeholder roles and responsibilities, (c) plans need to incorporate contingencies to address a dynamic disaster operating environment, and (d) the command and control structure should be as decentralized as required to mitigate the effects of an incident while incorporating as much centralization as possible. Steigenberger (2016) also found that centralized structures can be more challenging compared to decentralized structures when considering operational leadership, decision making, and information coordination. Steigenberger's (2016) research on the influence of bureaucratic structures is complemented by Denham and Baker (2019), who explore emergency management response to a catastrophic incident through a CAS lens.

Denham and Baker's (2019) study explored how the emergency management system at the county level responded to the overwhelming effects of Hurricane Harvey. Denham and Baker (2019) apply a CAS framework a conducted a qualitative study of response operations using an autoethnographic approach in Liberty and Harris counties, Texas, during Hurricane Harvey in 2017. The author's research approach included 100 hours of researcher field experience, 30 ad hoc and 40 structured interviews, 40 hours of

observations at post-Hurricane Harvey panels, and a review of 7,700 response related documents. Denham and Baker's (2019) interviewee sample included emergency management leaders, first responders, civic leaders, non-governmental organizational members, civic leaders, victims, and volunteers. Denham and Baker (2019) defined the term unstrapping in the study as any action which was contrary to SOPs, defined operating processes, communication protocols, or other conditions limiting sense-making.

Denham and Baker's (2019) findings suggested unstrapping occurred in three categories associated with adaptive behaviors (a) backchannel communications, (b) circumvention or modification of existing routines, and (c) violation or not adhering to established rules. The authors found backchannel communications happened primarily with emergency management leaders, circumvention among lower-level volunteers, and violation primarily among unaffiliated volunteers. Denham and Baker (2019) suggest that catastrophic events influence emergency management practitioners to achieve successful outcomes is to modify existing bureaucratic processes within a CAS environment.

In addition to the limitations of bureaucratic processes on the effectiveness of response organizations Rodríguez-Espíndola et al. (2018) provides an alternative consideration to challenges faced in bureaucratic organizing structures and systems performance. The authors identify misalignment of system processes and a contributing factor degrading system performance. Rodríguez-Espíndola et al. (2018) considered the influence of decision-making structure alignment on tactical operations and the influence

each has on system performance. Rodríguez-Espíndola et al. (2018) posited that research

is limited to the relationship between decision-making structures and tactical operations

and how each may influence performance in a logistics context. Rodríguez-Espíndola et

al. (2018) used a qualitative case study approach that consisted of emergency

management personnel interviews and document review of information about the

Villahermosa, Mexico floods in 2007. Rodríguez-Espíndola et al. (2018) found a

misalignment between decision making structures and tactical operations in terms of

information management, resource positioning, and distribution, and facility placement

procedures led to ineffective system performance. Rodríguez-Espíndola et al. (2018)

suggested that although many of the challenges with the centralized bureaucratic decision

are inherent in the process, system processes misalignment also need to be considered.

Rodríguez-Espíndola et al. (2018) findings diverge from the traditional research

focus on inherent bureaucratic, structural process deficiencies as a determinate of

ineffective system performance and consider the misalignment's influence of system

processes as a contributor. Rodríguez-Espíndola et al. (2018) suggest the emergency

management system must consider process alignment among all stakeholders in

developing an integrated framework for response operations.

A key driver of positive operational outcomes during catastrophic incidents is the

emergency management leader's ability to exercise adaptive responses while balancing

the need to control the situation. The literature has identified the barriers that a

bureaucratic organizing structure can inadvertently establish to impede effective

collaboration, coordination, response effectiveness, organizational adaptation, and the

failure in many instances for the emergency manager to overcome these barriers. Understanding the emergency managers lived experience responding to a catastrophic incident could provide insight to mitigate these operational barriers in future responses.

Emergency Management Networks

Emergency management networks provide an alternative to bureaucratic response structures (Kapucu & Demiroz, 2017). Collaborative emergency management networks and bureaucratic organizing structures coexist in catastrophic incidents. In catastrophic incidents, emergency management networks are critical structures for successful response outcomes (Kapucu et al., 2010; Kapucu, & Garayev, 2013; Kapucu & Hu, 2016; Robinson et al., 2013). These networks are comprised of stakeholders from both the public and private sectors. As the complexity and scale of the incident increases, so does the number of participants and organizations within the emergency management networks (Abbasi & Kapucu, 2016; Parker, et al., 2020).

Emergency management networks are established to facilitate collaboration, coordination, and management of scarce resources (Abbasi & Kapucu, 2016; Kapucu & Hu, 2016; Kapucu et al., 2010), address incident complexity (Kapucu et al., 2010; Kapucu & Garayev, 2011; Parker et al., 2020), and facilitate inter-organizational synergies in managing scarce resources (Roberts et al., 2020). A network response approach increases the skill sets and capabilities that can be brought to bear to meet the challenges confronted in a catastrophic incident. The grouping of organizations into a network exponentially increases the capabilities when compared to anyone organization (Abbasi & Kapucu 2016). Interorganizational emergency management networks within

the emergency management system operate based on previous stakeholder collaborations, relationship expectations, and stakeholder positioning within the network (Jung, et al., 2019).

Emergency management networks are not stagnated and adapt based on organizational structures, the operational environment, and the situation (Kapucu & Garayev, 2016; Parker et al., 2020). While many of the governance network member structures within the emergency management network are based on bureaucratic models, Newall et al. (2018), integrating a network approach is an attempt to mitigate some of the bureaucratic and coordination challenges associated with the emergency management system (Roberts et al., 2020).

Although a network approach to emergency response can be beneficial to response operations effectiveness during catastrophic incidents, network establishment can be difficult. Establishing and executing a network response to a catastrophic incident can be challenging (Gil-Garcia, et al., (2016). "Although building networks and maintaining them are highly desirable goals, they are often not easy to accomplish" (Kapucu & Demiroz, 2017, p. 39). Factors that Kapucu and Demiroz (2017) have identified as barriers to collaboration in establishing emergency management networks include (a) conflicts in the organizational culture of network members, i.e., organizational cultural acceptance of centralized decision making compared to a more decentralized process, (b) defined mission which is identified by network stakeholders, (c) network members do not have defined roles and responsibilities for their portion of the overall network mission, (d) power differentiation between organizations with positional power

within the network that may result from size or capabilities may not be as inclusive with those with lesser capabilities, (e) lack of effective communications plans among network stakeholders, and (f) lack of facilitating factors that bring together network members into a cohesive group.

Emergency management leader behavior in bureaucratic organizing organizations can be accustomed to a preferred method of command and control compared to a more collaborative network approach. Emergency management leaders in bureaucratic organizing structures where leaders are based on formal authority direct personnel and allocate resources have a reluctance to get things done by persuading and building consensus with inter-organizational partners to execute a requirement they want to be completed (O'Toole, 2003). Establishing emergency management networks takes time to build relationships before the disaster to be effective (Jung et al., 2019). In bureaucratic organizational culture, emergency management leaders view their time better spent on internal relationships building and organizational requirements than fostering inter-organizational relationships (Rivera, 2016).

To maximize the emergency management system's effectiveness, balancing the need for decentralized and bureaucratic structures can be a critical factor. An emergency management leader's ability to achieve equilibrium between the two structures can maximize the inherent advantages while enhancing the adaptability of the system. As Koliba et al. (2011), Kapucu and Garayev (2016), and Nowell et al. (2018) suggest, a blended organizational approach can increase emergency management system effectiveness.

Koliba et al. (2011), in examining accountability in governmental networks in the aftermath of Hurricane Katrina, concluded there needs to be a balance between bureaucratic and collaborative accountability structures when establishing emergency management networks. Koliba et al. (2011) posit a "mixed form" (p. 217) of network governance structure where bureaucratic processes facilitate organization and control, and collaborative structures designed to facilitate coordination. A balanced approach can mitigate some of the challenges identified by Kapucu and Demiroz (2017) with the bureaucratic governance processes and increase adaptability with more collaborative governance approaches. Each of the following studies considers the effects of a balanced approach in an emergency management context.

Kapucu and Garayev (2016) study considered the relationship between horizontal and vertical structural networks and the influence of these differences on expected network performance. Kapucu and Garayev (2016) examined the impact of Emergency Support Functions (ESF) and Incident Command System (ICS) as governance structures within the formal response, informal preparedness, and friendship networks as they relate to coordination and collaboration of response operations. Kapucu and Garayev's (2016) quantitative study considered how the response structure of two Florida counties, Orange County, organizes their Emergency Operations Center (EOC) by ESF, a horizontally integrated Duval County that organizes their EOC under ICS, a more hierarchical structure.

Kapucu and Garayev's (2016) study findings suggested an ESF governance structure based on the inherent flexibility can be more suitable for those operational

characteristics associated with a catastrophic disaster. Kapucu and Garayev (2016) make a distinction in critical emergency management network coordination and collaboration requirements. Kapucu and Garayev (2016) inferred based on the study findings that counties with limited resources may be better suited to use an ESF-based system for collaboration, and counties requiring coordination ICS may be more effective.

A limitation of the study noted by Kapucu and Garayev (2016) is the networks compared were non-paired. Coordination and collaboration are critical aspects of effective response operations. Emergency management leader's understanding of structural organizing influence on coordination and cooperation is vital in facilitating adaptive responses during catastrophic incidents (Waugh & Streib, 2006).

Nowell et al. (2018) suggested one of the challenges during a complex catastrophic incident is how to effectively balance the requirement for centralized coordination of hierarchical, bureaucratic structures and adaptability to adjust to a dynamic operational environment. Using a wildfire context Nowell et al. (2018) attempted to theorize the most striking characteristics of network structures in catastrophic incidents. Nowell et al. (2018) suggest catastrophic incidents have both the requirement for the integration of centralized and emergent coordination structures and the ability to bring in other stakeholders into the response network. Nowell et al. (2018) posited a modified core-periphery structure that could meet this requirement's needs and increase the network's effectiveness. Nowell et al. (2018) conducted a qualitative study with a sample size of 25 Type 1 Incident Commanders who operate at the tactical level during response operations.

Nowell et al. (2018) suggest that network structures' characteristics should consider a modified core-periphery operational structure compared to an integrated or centralized structure. A modified core-periphery model that includes several members of a core group, with a bureaucratic incident command governance structure acting as brokers who facilitate coordination between the core and the periphery, a more decentralized structural group characterized by members with functional expertise (Nowell et al., 2018). In the modified core-periphery model during an incident, peripheral members have significant interaction with each other separate from the core, which adds to the model's resiliency in the event of the core failure (Nowell et al., 2018). The core governance structure is centralized while the external peripheral members adapt to a more decentralized governance structure.

Having defined processes that are flexible for completing tasks among network members is also critical for network effectiveness. Andrew et al. (2018) study examined the use of SOPs and crisis communications during the initial response to the 2014 Ebola crisis. Andrew et al. (2018) conducted both online and face to face surveys with a sample size of 52 emergency management coordinators in the Dallas, Fort Worth metropolitan region of Texas for their qualitative study. Andrew et al. (2018) findings suggest the structure provided by SOPs is valuable in providing a baseline for moving forward in dynamic, uncertain, and complex operating environments. Emergency management leaders need to balance the structure of the SOPs offers and the need to adapt the SOPs based on the challenges confronted by the disaster (Andrew et al., 2018).

Gil-Garcia et al. (2016) explored the response structure to the World Trade Center terrorist attack and factors that facilitate effective management of a catastrophic incident from a bureaucratic and a network perspective. The authors used a mixed-method research methodology to conduct 29 semi-structured interviews and completed first responders' sociometric surveys. Gil-Garcia et al. (2016) study findings suggest that a network-centric response is not completely devoid of bureaucratic organizing structures, especially in leadership and resource allocation. Gil-Garcia et al. (2016) indicated that the response was comprised of both bureaucratic and network organizing structures, at the operational level network-centric, and at the political level was more characteristic of a bureaucratic structure. Gil-Garcia et al. (2016) identified a bureaucratic structure limitation was the ability to adapt initially to a disruption in the system caused by the attack.

Gil-Garcia et al. (2016) suggest the study finding supports (a) hybrid model that integrates both organizing structures, (b) having a network structure as a component of a bureaucratic hierarchy as considered in the Rethemeyer and Hatmaker (2008) study, and supports the position posited by Koliba et al. (2011) of a mixed form of network governance can increase network effectiveness.

Emergency management leaders should consider response structures that are most appropriate to a catastrophic incident during a response and develop plans designed to achieve required outcomes (Cairns, 2017). A catastrophic incident brings together a myriad of emergency management structural types. Emergency management leaders need to understand the role bureaucratic and more decentralized network structures play

in the emergency management system to build a collaborative and adaptive response design not solely dependent on bureaucratic structures. Leadership is a critical component in shaping the system.

Leadership in a Catastrophic Incident

In catastrophic incidents, leadership has a significant effect on organizational outcomes (Madanchian et al., 2017). An adaptable leadership behavior tailored to the situation can influence successful response outcomes (Peus et al., 2013). Many catastrophic incident's leadership failures have resulted in adverse response outcomes. Leadership failures contributed to ineffective response outcomes in Hurricane Katrina (Kapucu & Van Wart, Menzel, 2006; 2008; Moynihan, 2012; Takeda & Helms, (2006b), Hurricane Maria (Farber, 2018) Sewol ferry sinking in South Korea, (Jung et al., 2018).

An essential function of emergency management leaders is their ability to deal with crises effectively. Emergency management leaders need to understand the competencies necessary to execute response operations effectively during a crisis or obtain this understanding through training. As McDaniel (2007) suggests, leaders should adopt a systems way of thinking and not view organizations linearly, and increase their leadership emphasis on sense-making, learning, and improvisation. Emergency management leaders need to be innovative and not bound by traditional ways of responding to incidents and ridged plans. They must view the response to a catastrophic incident from a new perspective where consideration of emergent challenges during uncertainty through stakeholder is the norm (Ansell et al., 2020). An emergency management leader's understanding of the influence of context on leadership behavior,

organizational structure, and leadership influence on system performance are also critical requirements identified in the following study findings.

As Van Wart and Kapucu (2011) suggest, there is a distinction between leadership in a catastrophic incident and routine operations. Van Wart and Kapucu's (2011) study reviewed what leadership competencies are required by emergency management leaders primarily during the response phase of a catastrophic incident. Van Wart and Kapucu (2011) used a quantitative research methodology to survey 17 emergency managers who have responded to natural disasters and extreme events. Van Wart and Kapucu (2011) study findings suggest in a catastrophic incident, emergency managers should (a) display a calm demeanor while demonstrating definitive leadership, adaptive and not bureaucratic, (b) leaders need to be able to make decisions in a time-constrained operating environment, (c) leaders need to maintain routine coordination of duties. Van Wart and Kapucu (2011) research suggested that the leadership competencies for routine disasters and catastrophic incidents, although similar, because of the significant disruption to societal systems in catastrophic incidents, adaptive responses by emergency management leaders are critical.

Van Wart and Kapucu (2011) identified the sample size as a limitation and identified a challenge to get senior emergency managers with the requisite experience to respond. Van Wart and Kapucu's (2011) study reinforces the influence context of a situation has on the effectiveness of leadership behavior that emergency management leaders need to consider.

In addition to context, the level of incident complexity and operating environment dynamics influences leadership's need to exercise adaptive responses. Geir (2016) investigated if emergency management leaders adapted their leadership style between normal and extreme events in a firefighting context and if the selected leadership style influences follower performance in routine and extreme contexts. Geir (2016) conducted a quantitative study with a convivence sample size of 171 participants broken down by 87 leaders and 84 followers from three fire departments in the Southeastern United States and the remaining five located across the United States.

Geir's (2016) findings indicated transactional leadership and not transformational and passive-avoidance leadership was the dominant leadership style influencing follower performance positively in an extreme context. In normal routine operations, transformational leadership has a positive influence on follower performance. Geir's (2016) study, although focused on emergency management leaders in a fire fighting domain, highlights the need for a leader in adapting from normal routine operations to the challenges confronted in a catastrophic incident.

As Geir's (2016) study findings identify the context of the situation changes the type of leadership needed, so does the situation complexity level. Johannessen (2017) explored organizational complexity during extreme contexts, focusing on increasing understanding of how strategies and leadership development during a crisis to achieve successful operational outcomes through a complexity theory lens.

Johannessen (2017) developed a theoretical framework founded in complexity theory that suggested that the interaction between functional, bureaucratic, and political

structures before, while the response is ongoing and after an incident, influences operational strategies and leadership styles. The author conducted two qualitative case studies comprised of reviewing media and public documents and interviews. In Johannessen's (2017) first case study, 20 individuals associated with the police operation in response to the mass shooting on the island of Utoya, Norway, were interviewed. In the second case study, Johannessen (2017) interviewed 15 Norwegian Air Force officers involved in the Royal Norwegian Air Force's response to the Libyan crisis of 2011. Johannessen (2017) found that in both cases, the bureaucracy collapsed; in the mass shooting on the island of Utoya, police leaders followed a bureaucratic response focused on rules and hierarchal reporting structure, which limited their ability to adapt to the situation. In the Libyan response case study, strategic leaders bypassed the military bureaucracy's operational level and went right to the tactical level to exchange information.

Johannessen's (2017) findings suggest (a) bureaucratic structures responding to significant incidents operate in a time-constrained decision-making environment, resulting in the need for leaders to improvise and adapt their behavior to enable organizational adaptation to meet the challenges confronted in the time-compressed environment, and (b) leaders need to adjust their behavior to the context of the situation.

Kapucu and Ustun's (2018) study discussed the relationship between leadership competencies and effective crisis management in the public sector. Kapucu and Ustun (2018) conducted quantitative research using structural equation modeling (SEM) with a

sample size of 301 public administrators. The latter had a crisis leadership role dealing with human-caused and natural disasters in Turkey.

Kapucu and Ustun (2018) identified 12 variables to be considered within the following categories, (a) traits and skills; decisiveness flexibility, and communication, (b) task-oriented behaviors; problem-solving and managing innovation and creativity, (c) people-oriented behaviors; team building, planning, and organizing personnel, and motivating, (d) organizational oriented behaviors; networking and partnering, decision making, scanning the environment, and strategic planning. Kapucu and Ustun's (2018) study findings identified a positive relationship between core leadership competencies (traits, skills, and behaviors) and effective crisis management. The study findings also suggest that training on leadership competencies among emergency management leaders could better prepare them for the future crisis they will be expected to mitigate.

Leadership in a catastrophic incident is a critical component of success. The literature identifies the positive influence that emergency management leaders have on achieving operational objectives. As the complexity and uncertainty characteristic of catastrophic incidents grows, so does the need for effective leadership to bring together all stakeholders for an effective response. The emergency management leader's ability to understand how to exercise leadership in catastrophic incidents is critical for successfully restoring societal systems and returning to the new normal.

Summary and Conclusions

The effects on societal systems from a catastrophic incident are devastating. The uncertainty, complexity, and dynamic operating environment in comparison to routine

emergencies increases the need and criticality of effective leadership. The emergency management system is a Complex Adaptive System influenced by emergency management leaders. The emergency management system responding to a catastrophic incident comprises bureaucratic and more adaptive emergency management governance structures. To solve the complex challenges associated with a catastrophic incident, the emergency management ecosystem needs to adapt to meet the novel challenges confronted. Bureaucratic structures in a catastrophic incident operational environment limit adaptive response, timely decision making, and cross-sector stakeholder coordination and collaboration. The literature supports the need for adaptive responses by emergency management leaders, and the negative influence bureaucratic structures can have on response operations. The literature gap identified in this review is the emergency management leader's understanding of how to effectively adapt the bureaucratic structures within the emergency management system by managing conflict between organizational structure and the ability to adapt to novel situations confronted. Emergency management leader development training may be able to assist with increasing the level of understanding. The findings suggest a research gap this study can fill by exploring the lived experiences of emergency management leaders' understanding of how to execute adaptive responses needed to adapt bureaucratic organizing structures during a catastrophic incident.

Chapter 2 included an introduction, an explanation of the conceptual framework used for the study, a detailed review of the literature associated with the influence of bureaucratic structures on emergency leader adaptive responses, and a summary. Chapter

3 will discuss the research design and rationale, the researcher's role, methodology, participant selection logic, instrumentation, procedures for recruitment, participation, and data collection, data analysis plan, and issues of trustworthiness.

Chapter 3: Research Method

An emergency management leader's ability to exercise adaptive responses is essential for successful response outcomes during a catastrophic incident (Kapucu & Garayev, 2016). The literature review identified the negative influence that bureaucratic structures can have on an emergency management leader's ability to exercise adaptive responses during a catastrophic incident. The purpose of this study was to explore the lived experiences of emergency management leaders exercising leadership in bureaucratic structures in a catastrophic incident context. By understanding the emergency management leaders' interpretation of the influence of bureaucratic structures on their ability to exercise adaptive responses, the study findings could facilitate learning models to mitigate the influence of the bureaucratic structures in the future. A phenomenological research approach was used in this study because the method is suitable to explore the lived experiences of emergency management leaders in the context of a catastrophic incident (Alase, 2017; Moran, 2002; Matua & Van Der Wal, 2015; Sokolowski, 2000). Within the phenomenological tradition, IPA provided a mechanism to understand how individuals interpret their experience confronting challenges within a specific context (Noon, 2018; Smith et al., 2009), making it suitable to explore the study phenomena.

Although IPA was initially closely aligned with psychological research, the approach has become increasingly popular among researchers in the cognitive sciences and beyond (Peat et al., 2019; Smith, 2017; Smith et al., 2009). IPA continues to gain popularity with researchers exploring the lived experiences of individuals in relation to

their environment. The IPA approach has become a preferred method of phenomena exploration among qualitative researchers (Tuffour, 2017). IPA is suitable for exploring phenomena with a high degree of complexity and in situations where a participant's state of mind is influenced by the context of their situation (Peat et al., 2019). Compared to other qualitative approaches, an IPA approach provides the researcher with procedural flexibility and detailed participant focus designed to uncover the participant's interpretation of their lived experience in a specific context (Alase, 2017; Larkin et al., 2019.)

An IPA approach can explore previously researched or novel phenomena (Miller et al., 2018). A primary researcher's objective for using an IPA approach is to understand individuals making sense of their experience in a specific context (Alase, 2017; Noon, 2018). An IPA approach was chosen based on its suitably for research in an emergency management domain when considering the influence of bureaucratic structures on leader adaptability to gain an understanding of the interpretation of leader's lived experience in the context of a catastrophic incident. Chapter 3 describes the research design and rationale, the researcher's role, methodology, participant selection logic, instrumentation, procedures for recruitment, participation, and data collection, data analysis plan, and issues of trustworthiness.

Research Design and Rationale

The specific phenomenon to be explored was the influence of bureaucratic structures on emergency management leader's ability to exercise adaptive responses in the context of a catastrophic incident. To explore the lived experiences of emergency

management leaders operating in a bureaucratic structure's ability to exercise adaptive responses during complex catastrophic incidents, a qualitative IPA was used.

The research question addressing the specific concern of this study are:

RQ1: What are the lived experiences of emergency management leaders in catastrophic disasters given the bureaucratic organizational structures in which they operate?

RQ2: How do emergency management leaders find equilibrium between bureaucratic organizing processes and the need for adaptive responses in catastrophic incidents?

RQ3: How does member behavior in bureaucratic structures influence emergency management leader decision making?

Qualitative research is applicable for research when the study focuses on increasing understanding of a phenomenon (Aspers & Corte, 2019; Byrne, 2001). Qualitative research allows the researcher to explore and increase their understanding of a phenomenon through the study participant's individual experiences within a given context (Dodgson, 2019; Pathak et al., 2013). Qualitative research is suitable for this study because I aimed to increase understanding of the phenomena through exploration.

Each of the five qualitative research approaches, narrative, phenomenology, ethnography, case study, and grounded theory, were considered for the study. A narrative approach was rejected because the study's aim was not to develop a descriptive account or story of emergency management leaders' experiences but to understand their interpretation of their experience related to a phenomenon. An ethnography was not

suitable for the study because the ethnographical research approach is focused on the study of cultural groups based on researcher observations of the study participants in their natural setting, which was not the aim of the study. A case study approach was rejected because the study's intent was not to be limited by an analysis specific to a catastrophic incident but to understand emergency management leaders' lived experiences related to a catastrophic incident. A grounded theory qualitative approach was rejected because the study's intent is not to develop a new theory. A phenomenological approach was selected because it is most aligned with the study's aim to understand emergency management leaders' lived experiences relating to a specific context.

A phenomenological research approach allows the researcher to understand individuals shared experiences of a phenomenon within a given context (Creswell et al., 2007; Heotis, 2020). In comparison to positivism or quantitative approach, a phenomenological research tradition considers the individual's reality as they interact with their environment (Reiners, 2012). The study's IPA approach will focus on how the emergency management leader understands and interprets the meaning of bureaucratic structure's influence on their ability to exercise adaptive responses in the context of a catastrophic incident.

As Brocki and Wearden (2006) suggest, IPA's purpose is to interpret individual experiences in the context of a specific event. IPA differs from descriptive phenomenological methodology because IPAs focus is on interpreting the meaning of the lived experience, as expressed by the study participant in the hermeneutic tradition (Laverty, 2003; O'Halloran et al., 2018). An IPA research approach is guided by three

philosophical underpinnings, phenomenology, hermeneutics, and ideography (Engward & Goldspink, 2020; Noon, 2018; Peat et al., 2019; Smith et al., 2009). First, phenomenology provides the basis for understanding the individual experience as it relates to their environment, given a specific context. Second, hermeneutics finds understanding through an interpretation of the experience in IPA. Finally, ideography informs IPA through the detailed interpretation of the individual's understanding of their experience before continued analysis of another's experience in a similar context.

IPA is an appropriate research approach when the research aim is to interpret the lived experience of individuals based on the participant's interpretation of the phenomena in a given context (Paterson & Higgs, 2005; Smith et al., 2009), and the topic has a high degree of complexity (Smith & Osborn, 2015). "IPA is committed to the systematic exploration of personal experience" (Tomkins, 2017, p. 37). The research approach I have selected is a qualitative phenomenological approach in the IPA tradition because (a) it supports the exploration of the lived experiences of emergency management leaders, (b) is suitable for the catastrophic incident with a high degree of complexity, and (c) allows consideration of the influence of my extensive experience in the field of emergency management without biasing the study findings. Using an IPA approach, my goal was to gain a detailed understanding of the emergency management leader's interpretation of the bureaucratic organizational structural influence on their ability to exercise adaptive responses during a catastrophic incident.

A conceptual framework informed by a CLT reflexivity was used in combination with IPA. A CLT reflexivity was used to examine the inherent conflict between the

bureaucratic, structural processes, designed to bring control in an uncertain environment, and the need for emergency leaders exercising leadership in catastrophic incidents for adaptive responses. A CLT lens facilitated reflection on the researcher's position as an experienced military emergency management leader interpreting civilian study participants' lived experiences managing conflict between a much broader spectrum of stakeholders. The use of CLT lens and IPA increased understanding of the study participant's operational environment complexity in a catastrophic incident by considering the additional factors identified above in interpreting their experiences.

Role of the Researcher

The researcher's role is to explore and interpret the phenomena based on the lived experiences of the study participants (Alase, 2017). As a researcher using an IPA approach, the objective is "trying to make sense of the participant trying to make sense of their own experience in the interview" (Smith & Osborn, 2008, p 53). Using this double hermeneutic approach, the researcher uses an IPA approach to participate in interpreting the individual making sense of phenomena (Love et al., 2020). I explored the study topic while recognizing any personal biases associated with the study participant representations of their lived experiences. Bracketing was used to ensure the participant's interpretation of their experiences does not include any researcher bias. A three-step process was used to incorporate an effective bracketing strategy. First, reflexivity was included throughout the research process to address researcher bias (Chan et al., 2013). Second, during the data collection phase, I asked open-ended and clarifying questions throughout the interview and not steer the research participant to a specific conclusion

(Chan et al., 2013). Third, after the initial interpretation of the respondent's experience during the data analysis phase, as Chan et al. (2013) suggest, I l provided the participant with a manuscript to review and confirm their lived experiences to ensure it has been accurately interpreted. As Smith et al. (1999) suggest, all themes identified in the interview transcripts should be confirmed by interviewee recordings and not representative of researcher interpretations.

I have worked in the emergency management field for the last 20 years in a military context primarily. I will not have any personal relationships with the study participants. I will continuously evaluate any possible conflicts of interest and immediately address them.

Methodology

Participant Selection Logic

As indicated in the subsequent section on procedures for study participant recruitment, participation, and data collection, I followed the three-step process identified by MacDougall and Fudge (2001). The study participants criterion will be civilian emergency management leaders in the Southeastern United States who have supported or experienced a catastrophic incident within the last five years.

The homogenous sample population selected provided participants who can interpret their lived experiences exercising leadership in bureaucratic structures during a catastrophic incident essential to the study. As Smith (2019) suggests in IPA, data is derived from a homogenous purposive sample. A homogenous sample population was selected because when conducting IPA research, the selection of study participants who

have similar experiences will provide "a better gauge and a better understanding of the overall perceptions among the participants" (Alase, 2017, p.13). Verification that prospective study participants meet the criterion was completed through confirmation during the participant selection process, a review of public information available in governmental agency websites, and public media reports on the specific catastrophic incident referenced by the study participant. A purposive sampling strategy was used consisting of between 10 and 15 interviews or until saturation occurs. Smith et al. (2009) suggest that because IPA's emphasis is on a specific individual experience within a given context, a purposeful sampling strategy is more suitable than other non-homogeneous strategies. A purposeful sampling strategy was selected because purposeful sampling allows the researcher to identify those participants with in-depth lived experiences on the phenomena being studied (Suri, 2011).

Qualitative research scholars have posited a determinant of sample size is based on the practical, epistemological, and methodological underpinnings of a study, not a defined number (Baker & Edwards, 2012). Smith et al. suggest "sampling must be theoretically consistent with the qualitative paradigm in general, and with IPA's orientation in particular" (p.48). IPA research studies are usually based on small sample sizes because of the idiographic approach required (Allan & Eatough, 2016; Dos Santos, 2020; Noon, 2018; Peat et al., 2019; Pietkiewicz & Smith, 2014; Smith et al., 2009). Smith et al. (2009) suggest between three and six participants can be an acceptable sample size for traditional IPA studies.

Saturation in the IPA tradition can refer to when the researcher has achieved a deep understanding of the study participants' lived experience within a given context and, as Smith et al. (2009) suggest, the researcher's understanding of meaningful areas of participant convergence and divergence of experience. The range of participant interviews will be in accordance with the number needed to achieve saturation (Manson, 2010; Hennink et al., 2017). Although there are varying researcher opinions on the amount of data required to achieve saturation, most researchers agree that saturation occurs after determining that "no new data, no new themes, no new coding and ability to replicate the study" (Guest et al., 2006; Fusch & Ness, 2015, p.1409), is achieved.

Instrumentation

The primary data collection instrument is the researcher developed interview guide identifying the interview protocol and open-ended interview questions wherein participants will be given the opportunity to share their lived experiences (Appendix A). A semi-structured interview, typically used in IPA (Peat, 2019), is the type of interview used for the study. A semi-structured interview can elicit from the study participant an in-depth, detailed, and rich interpretation of their lived experience, allowing increased understanding by the researcher (Whiting, 2008). Multiple follow-up questions have been developed to ensure all available data to increase researcher understanding of the participant's interpretation of the phenomena is captured.

The interview guide was designed based on the literature review and study research questions. An interview guide provides the researcher with a mechanism to move from listening to the participant to eliciting additional information detailed enough

to achieve understanding (Brod et al., 2009). Instrument validity is an essential component of a study. Content validity in instrumentation refers to the instrument interview questions' ability to capture the essence of the phenomena based on the lived experience of the study participant (Patrick et al., 2011). As Brod et al. (2009) suggest, one of the most important ways to increase qualitative study validity is to have one on one interaction with study participants detailing their experience of the phenomena. This one on one interaction was completed through researcher executed interviews that were not rushed, detailed oriented, and consider an inter-subjective reflective process. Peat et al. (2019) suggests the researcher during the IPA process "draws on an inter-subjective" (p. 8) reflective process that emphasizes thoughtful consideration of the interpersonal dynamic of both the researcher and the study participant in achieving a rich understanding of the individuals' lived experiences. Content validity of the interview guide was achieved through the dissertation committee chairperson expert review.

Emergency management agency publicly available information relating to operational plans and processes, along with public media reports specific to the governmental agency and catastrophic incident, will also be reviewed. These documents included After Action Reports (AAR) on the specific catastrophic incident associated with the emergency management leader to be interviewed. Governmental and regulatory AAR's provided additional context on the study topic that can increase understanding of the effects of the incident on societal systems and challenges confronted by emergency management leaders. Because the AARs are, in most cases, written by organizations who are responsible for the response, the potential bias of the data needed to be considered

during the review. Comprehensive Emergency Management Plans (CEMP), also available on agency websites, provided a comprehensive breakdown of the processes and procedures on how an agency will respond to a catastrophic incident. Emergency management agency websites will be reviewed for relevant documentation relating to the specific catastrophic incident. Publicly available media reporting specific to the catastrophic incident and agency was also be reviewed to provide additional context and understanding of agency response efforts and incident magnitude. All relevant documents were downloaded and categorized based on the interviewee and catastrophic incident.

In accordance with an interview guide, all interviews were recorded and transcribed using NVivo Release 1 (MAC). All data files from the interviews were password-protected files on my computer. Additionally, audio and transcriptions will be backed up in an encrypted file on a remote drive. All study participants have received a synopsis of major themes and findings after the study has been completed.

Procedures for Recruitment, Participation, and Data Collection

After the study was approved by the Institutional Review Board (IRB) # 03-01-21-0579334, I followed a three-step process identified by MacDougall and Fudge (2001). MacDougall and Fudge (2001) suggests a three-step iterative process to effectively achieve the requisite number and quality of interviewees for a study. First, in the preparation stage, key emergency management leaders and networks in the Southeastern United States who have been involved in or supported a catastrophic incident in the last 5 years that can participate in the study and act as champions to garner the support of other

prospective interviewees will be identified (MacDougall & Fudge, 2001). Second, key emergency management leaders and personnel identified in the emergency management networks will be solicited telephonically, in person, or through the use of a study champion. During this engagement, I provided each prospective participant (a) a study fact sheet outlining the purpose of the study, including an informed consent form, (b) initial and follow-up interview requirements, and (c) the benefits of the research to the emergency management community (MacDougall & Fudge, 2001). Third, to maintain prolonged engagement after the interview, an email will be provided to the study participant with a general overview of the study findings and the themes identified (MacDougall & Fudge, 2001).

Data collection methods included interviews, governmental agency publicly available catastrophic incident-specific documents, and public media reports. Interviews provide the degree of rich data needed for an IPA approach (Smith et al., 2009). Using the research questions as a guide, the interview's objective is to elicit an interpretation by the study participant to understand their lived experience (Smith et al., 2009). The interview guide (Appendix A) provides an outline of the interview protocols and questions. Each study participant interview lasted approximately one hour. The interview was recorded using Microsoft Teams. Follow up interviews were conducted as required for select study participants.

Governmental agency catastrophic incident-specific documents included information on agency websites related to response operations and emergency management leaders associated with catastrophic incidents. This included AARs and

situation reports that were publicly available. These documents provided additional context and understanding of the agency bureaucratic processes associated with the emergency management leader's interpretation of their lived experiences. Public media reports facilitated an increased understanding of the catastrophic incident's effects on the societal systems that the emergency management leader was confronted with supporting the restoration of, and agency response outcomes.

Data Analysis Plan

The study interview questions were designed to obtain detailed descriptions of the study participant's lived experiences specific to the research questions. After the interview transcription, the document was sent to the interviewee for member checking. To analyze the data from the transcription, I followed the six-step iterative process outlined by Smith et al. (2009) for IPA. The six-step iterative process outlined by Smith et al. (2009) is the common process used for IPA research (Miller et al., 2018). Although Smith et al. (2009) provide a detailed IPA process that provides a detailed framework for the IPA researcher, the authors emphasize that their approach is not prescriptive. A researcher can be innovative to adjust any phase of the process while adhering to the process intent.

The IPA process's initial step focused on "immersing oneself in the original data" (Smith et al., 2009, p. 82). In this stage of the process, interview transcripts will re-read multiple times, with audio recordings listened to simultaneously. The researcher's objective in this step is to understand the study participant's interpretation of their lived experiences from the interviewee's perspective by becoming immersed in the data. A

comprehensive, detailed analysis of a single interview transcript will be completed before moving to the next (Peat et al., 2019).

In step two, a detailed analysis of the transcript took place. A reflective journal housed within the software package was used to analyze transcripts, NVivo Revision 1 (MAC), was used for notetaking. Vicary et al. (2017) suggests the data analysis technique of integrating a reflective journal inside a data analysis software increases the validity and quality of the IPA. The combination of the two processes provides (a) elements of an audit trail through annotation of transcripts, (b) a visual representation of bracketing, and (c) transparency as to the steps used in the data analysis (Vicary et al., 2017). NVivo Revision 1 (MAC) did not replace the researcher requirement to analyze the data (Smith et al., 2009), but facilitated the management of data coding and establishment of coding trees in transcripts (Wagstaff et al., 2014). The reflective journal allowed for adherence to the hermeneutic tradition by annotating interpretations of the transcripts' parts in relation to the whole of the participant's interpretations. This reflective process was followed throughout the analysis process. The use of a reflective journal within the software package was dynamic, simultaneously enabling the process of moving from description to interpretation and development of the hermeneutic and later double hermeneutics, essential to IPA, and the assurance of its quality and validity" (Vicary et al., 2017, p. 557). This step's end state was to identify a series of descriptive, linguistic, and conceptual exploratory comments with the goal of an explicit understanding of the emergency management leader's interpretation of their lived

experience (Smith et al., 2009). This detailed analysis resulting from this step provided the foundation for step three, developing emergent themes.

In step three, emergent themes were developed from the exploratory notes developed from the previous step. Smith et al. (2009) suggest during the development of emergent themes, the study participants original perspectives of the lived experiences are interpreted by the researcher using a hermeneutic framework. After the chronological documentation of emergent themes based on individual study participant transcripts, I began connecting concepts across themes.

The study research questions were used as a guide for evaluating the most relevant emergent themes. As Smith et al. (2009) suggest, mapping themes to ascertain how each theme may fit together to understand the study's most critical components. Themes were be evaluated in chronological order into clusters. The completion of step four identified the most informative and critical components of the study participant's interpretation of their lived experience (Smith et al., 2009).

Each study participant transcripts were analyzed using the same irritative process based on their own merits. Miller et al. (2018) suggest the researcher in IPA must complete a thorough analysis of each case before moving on to the next. As the evaluation of the next transcript begins, it is important to bracket the information developed in the previous transcripts from influencing the evaluation (Smith et al., 2009). In completing this step, it was essential to maintain a level of self-awareness of my previously learned concepts in the analysis process and evaluate each transcript unbiasedly.

The final step in the process evaluates thematic patterns across all of the participant transcripts were analyzed. I established a master table of themes considering each of the transcript analysis. Superordinate and subthemes were identified and ordered by comparing each of the transcripts

Data identified in Recruitment, Participation, and Data Collection phase from agency websites and public media reports were downloaded and categorized by a catastrophic incident. The data was compared to individual transcripts during and after transcript evaluation to support triangulation. No discrepant cases were identified.

Issues of Trustworthiness

Credibility

Sandelowski (1986) suggests that credibility in qualitative research is achieved when there is a shared understanding of the lived experience among individuals. Cope (2014) indicates the researcher needs to "demonstrate engagement, methods of observation, and audit trails" (p.89) to facilitate credibility in research. Therefore, I used strategies to ensure credibility, including reflexivity, prolonged engagement, and member checking. To minimize inherent researcher bias, I maintained a reflexive journal throughout the research process. The journal allowed me to reflect on my learning experiences as I work through research stages (Cope, 2014). A reflective journal enables the researcher to maintain a level of self-awareness and experience acknowledgment of the relationship between researcher feelings and their influence on the interpretation of the phenomena (Ortlipp, 2008). Developing a rapport based on mutual trust between the researcher and study participant is critical for prolonged engagement (Cope, 2014). To

build a rapport based on trust, (a) interviews will not be rushed, (b) in-depth responses will be solicited from study participants, (c) and I will restate the responses from the interviewees to confirm my understanding of the experience stated, and (d) in the data analysis phase interviewee's responses will be restated to confirm the accuracy of my interpretations of the data (Cope, 2014).

Transferability

Transferability in qualitative research is the extent to which the study findings apply to other contexts (Byrne, 2001; Houghton et al., 2013; Connelly, 2016). The role of the researcher is to provide a "thick description of the participants and the research process, to enable the reader to assess whether your findings are transferable to their own setting" (Korstjens & Moser, 2017, p.122). To establish transferability, a detailed description of the phenomena, context, research methods, and study boundaries was articulated to the reader in such detail as to allow understanding of the possible applicability to various situations. To achieve sufficient thick descriptions of the study phenomena, interviewees were asked open-ended questions, follow-up questions, and member checking will be used to elicit an understanding of the study participant's unique lived experiences (Amankwaa, 2016). This robust and pragmatic researcher interaction resulted in a more detailed understanding of the phenomena from the participant's perspective. As Amankwaa (2016) suggests, the researcher's objective is to describe the research process and phenomena in such detail as to affect the reader profoundly.

Dependability

Qualitative research's dependability is based on similar study findings by another researcher using a similar context and study participants (Shenton, 2004; Cope, 2014). The strategy used to ensure dependability included a reflexive journal consisted of an audit of the process followed throughout the study. As Shenton (2004) suggests, (a) documentation and detailed explanation of the implementations of the research design, (b) a detailed explanation of field research and data obtained, and (c) a critical reflective evaluation of the study can facilitate establishing dependability. Identification of the research steps followed in an audit trail provided sufficient transparency and understanding of the process followed to support the relationship between the study findings and the participant's lived experiences (Korstjens & Moser, 2017).

Confirmability

Confirmability of the study is a critical component of trustworthiness that ensures researcher bias is not represented in the study findings. A reflexivity strategy was used in addressing the need for confirmability. A reflexive journal was used throughout the research process, clearly articulating my thoughts, perceptions, and focus on bias minimization. In addition, as Guba (1981) suggests, triangulation minimizes researcher bias and facilitates study confirmability. Therefore, a minimum of two sources of data was used to document each study's findings.

Ethical Procedures

Ensuring the required ethical standards were considered throughout the research process. Before beginning the research process, an Institutional Review Board (IRB)

application was submitted to Walden University for approval. The response from the IRB based on my submission of Form A indicated, "Since you seem to be proposing a straightforward study involving non-vulnerable participants and non-sensitive data collection, you will be going through Walden's expedited IRB process" (B. Saunders, personal communications, July 27, 2020). The final submission of IRB documents was completed, and IRB approval was granted.

For recruitment and participant selection, I executed the following process. First, I completed a participant risk assessment to determine if any of the study participants would be subject to "potential adverse effects, risks or hazards" based on their involvement in the study (Walker, 2007, p. 39). No study participants were identified. Second, the study participants were provided an informed consent form for review and signature. The informed consent form was discussed in detail with the participant to avoid any possible ambiguity in understanding the study and participation requirements. No study participants had to withdrawal from the study. Third, all data that was obtained from participant interaction or confidential sources was safeguarded in envelopes in a locked container to avoid inadvertent discloser. Study data analysis and findings were not attributed to any participant. All data relating to the study not required was shredded before disposal.

Summary

Chapter 3, the research methodology guiding the study, and the rationale for the methodology's selection were described. Although additional qualitative and

phenomenological specific approaches were considered, an IPA research approach was selected.

After IRB approval and all required protocols are followed, the data collection began. Using semi-structured interviews and purposive sampling, the researcher's role explored the phenomena by interpreting the participant's interpretation of their lived experience. Data collected from governmental agency websites and media reports specific to the catastrophic incident was also considered in the data collection phase. The six-step IPA data analysis process pioneered by Johnathon Smith and used extensively in IPA research was used in this study.

Finally, to ensure the study's quality, the chapter identified how trustworthiness issues were addressed, specifically credibility, transferability, dependability, and confirmability. The ethical procedures that were followed during the study, including risk assessment, informed consent, and confidentially were described. Chapter 4 describes the research setting, demographics, data collection, data analysis, evidence of trustworthiness, and the study results.

Chapter 4: Results

The purpose of this qualitative IPA study was to explore the lived experiences of emergency management leaders responding to catastrophic incidents in the Southeastern United States relative to the bureaucratic organizational structure's characteristic of emergency management agencies in catastrophic disasters.

The following three research questions guided the study research:

RQ1: What are the lived experiences of emergency management leaders in catastrophic incidents given the bureaucratic organizational structures in which they operate?

RQ2: How do emergency management leaders find equilibrium between bureaucratic organizing processes and the need for adaptive responses in catastrophic incidents?

RQ3: How does member behavior in bureaucratic structures influence emergency management leader decision making?

This chapter discusses how the research data was collected and analyzed and presents the study results. Additionally, the chapter discusses the research interview setting, demographics, and evidence of trustworthiness. The chapter culminates with a summary.

Setting

The COVID-19 pandemic resulted in all study participant interviews being conducted using Microsoft Teams. Participants were interviewed in private settings at either the participant's work location or home office. Before the interview, participants

were provided with a timeframe for the interview and based on the time selected; a

Microsoft Teams invite was provided. The interviews were conducted with minimal to

no interruptions. No external environmental factors negatively influenced the interviews

or data collection.

Demographics

The 12 participants met the study's inclusion criteria as an emergency

management leader supporting a catastrophic incident response in the Southeastern

United States within the last 5 years. Table 1 identifies the study participant

demographics. The participants identified as White with extensive experience in

emergency management and leaders. The participants had between 8 to 44 years within

the emergency management career field with a range of 3 to 23 years as an emergency

management leader. Participants had emergency management experience at the County,

State, Federal/National levels. Eleven of the participants were male, and one was female.

Table 1

Participant's Demographic Data

Participant	Age	Gender	Race	Years working in Emergency Management	Years as an Emergency Management Leader	Level
1001	65	Male	White	32	25	State
1003	56	Male	White	16	9	State, Federal/National
1010	61	Male	White	38	15	State, Federal/National
1018	56	Male	White	21	15	State
1040	53	Female	White	12	12	County
1047	49	Male	White	19	18	State, Federal/National
1053	49	Male	White	17	17	County
1075	33	Male	White	8	3	State
1080	62	Male	White	25	16	State, Federal/National
1093	68	Male	White	26	29	State, Federal/National
1113	68	Male	White	23	23	State
1117	62	Male	White	44	14	County, State, Federal/National

Data Collection

Prospective study participants were solicited, and participant interviews were conducted following the IRB approved process outlined in Chapter 3. After receiving IRB approval, I identified emergency management leaders operating in the Southeastern United States who had supported catastrophic incidents in the last 5 years that could participate in the study. Twelve prospective interviewees, including study participant champion referrals, were solicited through email, and agreed to participate in the study.

After electronically receiving the participant's informed consent, interviews were scheduled telephonically, with subsequent follow-up emails to confirm the interview date and time.

A purposeful sampling strategy was used to interview the 12 study participants using Microsoft Teams over 26 weeks. The study interview guide (see Appendix A) was used to conduct semistructured interviews at the participant's workplace or home office. The audio portion of the interview from Microsoft Teams was then transcribed using NVivo Release 1 (MAC) transcription. The interviews were scheduled for 60 minutes, with most lasting the entire 60 minutes, and those interviews that didn't ranged from 45-50 minutes. Five follow-up interviews were conducted to clarify the initial information, lasting between 5 to 10 minutes. All interviews went smoothly with no or minimal interruptions.

A member check was completed with each participant. The participants were provided a detailed interview summary and the transcription data. Once the participants reviewed the documents, they acknowledged the accuracy of the interpretation of their experience. Relevant public domain documentation from organizational websites, After Action Reviews, , federal major disaster declarations, briefings, SOPs, some provided by the study participants, were also gathered to support triangulation.

Data Analysis

I followed the six-step iterative process that Smith et al. (2009) outlined for IPA to analyze the data. The initial step focused on "immersing oneself in the original data" (Smith et al., 2009, p. 82). In this stage, the researcher begins the process of active

engagement with the data to focus the researcher on the underlying meaning of the

information collected (Smith et al., 2009). Interview transcripts are re-read multiple

times, and audio recordings are listened to simultaneously (Smith et al., 2009). The

researcher's objective is to understand the study participant's interpretation of their lived

experiences by becoming immersed in the data (Smith et al., 2009). Step two involves a

detailed analysis of the transcript. As Smith et al. (2009) suggest, this step is the most

laborious and "examines semantic content and language use on a very exploratory level"

(p. 83). In step three, emergent themes will be developed from the exploratory notes

created from the previous step. Smith et al. (2009) suggest that during the development

of emergent themes, the researcher interprets the study participants' original perspectives

of the lived experiences using a hermeneutic framework. Step four involves searching

for how emergent themes may fit together to understand better the underlying phenomena

components (Smith et al., 2009). In step five, the individual study participant's

transcripts analysis is finalized, and the researcher begins the evaluation of the next

transcript (Smith et al., 2009). In the final step, the researcher evaluates thematic patterns

across all the participant transcripts analyzed to capture overarching themes across cases

that can further increase the understanding of the phenomena (Smith et al., 2009).

     In the initial stage of the analysis process, I read and reread the interview

transcripts multiple times while listening to the audio transcripts, taking copious notes

throughout the process. As Smith et al. (2009) suggest, my focus was on understanding

the participants' interpretation of their experiences. In step two, using a reflective journal

housed within NVivo Release 1 (MAC), a more detailed analysis was performed with

additional notetaking and reflection on the participants' lived experiences. Using a reflective journal as part of the participant transcript analysis increases the validity and quality of the IPA (Vicary et al., 2017). To gain additional context and support triangulation, I also reviewed participant-specific documents consisting of federal disaster declarations, organizational diagrams, operational reports, and processes. The use of triangulation where multiple data sources provide increased validity of the data and provide a mechanism for the researcher to obtain increased incite on the interpretation of the data (Kekeya, 2021; Farquhar et al., 2020). Based on the data interpretation conducted in step two and guided by the research questions, in step 3, I began to establish emergent themes using the hermeneutic framework for individual study participant transcripts. In step 4, I started considering connections across emergent themes identified in each transcript the better understand how the participant's interpretation of their experience provides increased understanding of the phenomena. After completing this iterative process, I moved on to the next participant transcript until all were completed.

In the final step, I evaluated thematic patterns uncovered in my analysis across each participant's transcripts. I established a master table of themes considering each of the transcript analyses. I made reflective notes to consider my interpretation of the participant's experiences presented throughout the above process. Superordinate and subthemes were identified and ordered by comparing each of the transcripts.

Evidence of Trustworthiness

Credibility

Credibility in qualitative research is achieved when there is a shared understanding of the lived experience among individuals (Sandelowski, 1986). To facilitate the study's credibility, as Cope (2014) suggests, I used strategies to ensure credibility, including reflexivity, prolonged engagement, and member checking. I maintained a reflective journal to minimize inherent researcher bias throughout the research process. The journal allowed me to reflect on my experiences throughout the interview process and consider my feelings as I interpreted the participant's experiences. I developed a report with each study participant by following a systematic method of engagement focused on understanding the participant's interpretation of their experiences. As Cope (2014) suggests developing a rapport with the study participants is critical for prolonged engagement. The interviews focused on building trusting relationships to elicit participant responses that provided a deep understanding of their experience within their unique operational setting. The rapport developed facilitated the participant's willingness to provide detailed descriptions of their experiences.

All the interviews were transcribed verbatim, and interview summaries were developed. Both documents were provided to the study participants for confirmation that my interpretation of their experiences was accurate. The member checking process used in the study ensured the accuracy of my understanding of the participant's experiences.

Transferability

The objective of transferability in qualitative studies is to provide a sufficient understanding of the data for others to decide whether the findings could apply to other contexts (Schwandt et al., 2007). To establish transferability, the researcher needs to articulate a detailed description of the phenomena, context, research methods, and study boundaries to allow understanding of the possible applicability to various situations. The role of the researcher is to provide thick descriptions of the participant's experience relating to the study phenomena, interviewees will be asked open-ended questions, follow-up questions, and member checking will be used to elicit an understanding of the study participant's unique lived experiences (Amankwaa, 2016). A thick description is characterized as a detailed description of the emotional, thought process, context, and social interaction associated with the study participant's description of the phenomena experienced (Ponterotto, 2006). To achieve sufficient thick descriptions of the study phenomena, interviewees were asked open-ended questions, follow-up questions, and member checking was used to confirm my understanding of the study participant's unique lived experiences.

Dependability

As Shenton (2004) and Cope (2014) suggest, qualitative research's dependability is based on similar study findings by another researcher using a similar context and study participants. As Shenton (2004) suggests, (a) documentation and detailed explanation of the implementations of the research design, (b) a detailed explanation of field research and data obtained, and (c) a critical reflective evaluation of the study can facilitate

establishing dependability. The strategy I used to ensure dependability included a reflexive journal with an audit of the process followed throughout the study. In my reflective journal, I identified the (a) research steps followed, (b) the methods used, and (c) how they relate to the participant's lived experiences. In addition, a detailed review of the study was completed by my committee to confirm the alignment of the research process followed in understanding the participant's lived experiences and study findings.

Confirmability

Confirmability is a critical component of trustworthiness that ensures objectivity and researcher bias is not represented in the study findings. As Ellis (2019) suggests, confirmability requires understanding how the data was compiled and researcher interpretations of the participants' experiences as indicated in the study. I used a reflexivity strategy and triangulation in addressing the need for confirmability. A reflexive journal was used throughout the research process, clearly articulating my thoughts perceptions focusing on bias minimization. The use of original participant quotes in the study identified the basis for my interpretation supporting the conformability of the study (Ellis, 2019). Triangulation was also used to minimize researcher bias and facilitate study confirmability. As Guba (1981) suggests, triangulation minimizes researcher bias and facilitates study confirmability. As a result, multiple data sources were used to assess the interpretation of the data, including relevant public domain documentation from organizational websites, After Action Reviews, briefings, and SOPs.

Results

Superordinate and subordinate themes were established using the study research questions as a guide. Superordinate themes were the names given to clusters of like subordinate themes that emerged from participant descriptions of their experiences (Smith at al., 2009). As shown in Table 2, eight superordinate and fourteen subordinate themes were identified. A more detailed description of each of the themes follows in the subsequent paragraphs after Table 2.

Table 2

Superordinate Themes and Subordinate Themes

#	Superordinate Themes	Subordinate Themes
1	The effects of bureaucratic organizational structures can be a limiting factor during a catastrophic incident	a) Bureaucratic organizational structural constraints b) Organizational size
2	The context of the human-caused or natural disaster influences leader perception of what is required	a) Routine incident b) Catastrophic Incident
3	Importance of emergency management leadership	a) Leadership b) Senior leadership support c) Facilitating adaptive responses d) Member empowerment e) Mutual Trust f) Communication
4	Relationships play a critical role in influencing outcomes in a catastrophic incident	Building and maintaining stakeholder relationships
5	Bureaucratic organizational structures processes for control provide a foundation for organizational adaptability	Organizational adaptation rooted in evolving established bureaucratic processes
6	A catastrophic incident forces the organization's structure to adapt	Effects of a catastrophic incident on the organization
7	The bureaucratic organizing culture can influence member behaviors and response outcomes	a) Negative influence on member behavior b) Bureaucratic culture can influence member adaptive responses and response outcomes
8	Member experience influences successful outcomes	Member experience in responding to previous incidents facilitated the ability of the organization to respond to new ones

Note. RQ1 superordinate themes 1-4, RQ 2 superordinate theme 5 and 6 and RQ3 superordinate themes 7 and 8.

Superordinate Theme 1: The Effects of Bureaucratic Organizational Structures Can Be a Limiting Factor During a Catastrophic Incident

This superordinate theme describes how participants viewed the bureaucratic organizational processes as having a limiting effect on successful operational outcomes during a catastrophic incident. The theme includes inherent bureaucratic organizational structural constraints and organizational size. Bureaucratic organizational structure constraints refer to how bureaucratic organizing characteristics focused on processes and procedures designed to control member actions and organizational outcomes can limit adaptive responses needed during catastrophic incidents. Organizational size identifies some participant's perceptions that the organization's size influenced the degree of bureaucracy in organizational structures.

Theme 1a: Bureaucratic Organizational Structural Constraints

All the participants described the need to mitigate the influence of bureaucratic structure's inherent organizing framework during catastrophic incidents. The context of a catastrophic incident necessitates overcoming any bureaucratic, structural limiting organizing processes to achieve required operational outcomes. Participants indicated one or more processes, including plans, procedures, or organizational structure, needed to be adapted based on the situation confronted. When discussing the limiting factors of bureaucratic organizational structures organizing processes, Participant 1018 described how an emergency management leader needs to be able to navigate these limiting factors to achieve required outcomes, "Bureaucracy means navigating, limiting factors such as policy and procedures that may not have the best effect on what you're trying to do."

Participant 1080 described how emergency management leaders need to cut through the bureaucracy and make things happen to effect required outcomes, "About bureaucracy, we often used to say that we were like [pipe cleaner] because the clogs were stopped up. People would move in, and we thought it was emergency management's role to put some [pipe cleaner] in the pipes to get them flushed out and get them going."

Participants described the negative influence of bureaucratic organizational structure processes as applicable to stakeholder organizations operating in the emergency management system supporting response operations they were working with. Participant 1003, when discussing the limiting effect of a stakeholder agency's bureaucratic process and procedures during a catastrophic incident, described how the stakeholder agency's inability to adapt to the novel situation confronted based on their rigid established procedures influenced response efforts. "Staff wasn't adaptable enough; they were very stuck with we do things one, two, three, and that's it. They could only do it the way they did it." The participant continued, "they legitimately wanted to do everything the way they'd always done it, despite the fact it was a catastrophic incident."

Some participants described how bureaucratic organizational processes should be considered throughout the emergency management system when executing response operations because they existed at levels throughout the system. When discussing the need to consider the various layers of organizational bureaucracy within the emergency management system in a catastrophic incident, Participant 1075 indicated, "There's bureaucracy up and down the chain. There're multiple levels of bureaucracy; whether

you're talking about the Feds, the States, the Locals, whether they be operational or political, every component of that is a bureaucracy".

Theme 1b: Organizational Size

Some participants described how the organization's size impacted the degree of influence bureaucratic organizing processes had on member actions. Five participants indicated that the greater the organization's size, the greater the degree of bureaucratic organizing processes that need to be mitigated. The participants indicated that smaller organizations could better mitigate the effects of bureaucratic processes based on the limited number of members required for effective decision-making and how small organizations fostered relationships among members. Participant 1010, when describing their increased ability to adapt to novel situations, remarked,

> It's the size… I would say the bureaucracy of the federal government, the bureaucracy of the state government, so much larger than the bureaucracy that I have seen in a local county government not as ridged." The participant went on to say in a small community, "The hospital president was part of the team, the school superintendent, we have the ability to bring people together and what's even more impressive out here is that they listen to each other, trust each other and work together.

When discussing how the organizational size mitigates the limiting effects of bureaucratic structures on member decision making, Participant 1040 indicated the smaller organizational size "Increases our abilities to do things. "We can move more quickly through decision making." Participant 1113 highlighted when discussing the

rigidity of stakeholder agency's inability to adapt from established procedures based on their large size, indicated, "It's a big organization, got like 4,000 people in it, they're not exactly nimble."

Superordinate Theme 2: The Context of the Human-Caused or Natural Disaster Influences Leader Perception of What Is Required

This superordinate theme describes how participants perceive the effects of human-caused or natural emergency management incidents. This theme includes routine and catastrophic incidents. Routine incidents are mitigated at the local first responder level based on their limited impacts on the societal ecosystem and reduced complexity and uncertainty. The converse is true of catastrophic incidents. Based on their effects on the societal ecosystem, complexity, and uncertainty, catastrophic incidents can overwhelm a societal ecosystem at various governmental levels, i.e., county, state, or federal level requiring the capability to restore the system.

Theme 2a: Routine Incident

Most participants described a routine emergency management incident as mitigated using defined processes and procedures and addressed at the first responder level without significant bureaucratic, structural adaptation. Four participants described a routine emergency management incident as mitigated using defined processes and procedures, and four described routine incidents as being addressed by first responders at the local level. One participant described a routine incident as having enough capability at the operational level needed to mitigate the effects of the incident. In comparison, another indicated that the distinction between a routine and catastrophic incident is time

and resources. The routine incident is addressed in a shorter time duration without the need for additional resources to mitigate the effects of the incident.

In describing routine disasters, Participant 1001 indicated, "A routine incident would be handled differently [than a catastrophic incident], the process we use day to day." Participant 1010 describes how "Fire chiefs, police chiefs, sheriffs, EMS responders, they manage those day-to-day responses that take place outside of any need to activate the emergency response plan." Participant 1075 describes how with routine incidents, "You have the ability oftentimes to stick within the plans and procedures and things you exercised."

Theme 2b: Catastrophic Incident

The dominant theme by participants in describing the distinction between a catastrophic and routine incident is that a catastrophic incident requires an organizational structural adaptation to address the effects on the ecosystem. Eight of the participants indicated the organization goes through some degree of adaptation, including modifying the emergency operations plan, establishing an emergency operations center, or integrating external emergency management capability to mitigate the effects of a catastrophic incident. The participants also indicated there is an increased level of complexity and magnitude associated with a catastrophic incident. Participant 1075, when describing the need for organizational adaptation and flexibility, indicated,

> No plan survives first contact with the enemy, and in a catastrophic incident, it's
> the same, you want to have the flexibility within your systems to be able to go
> off-script, but you want to be able to do it in a trusted environment." He went on

to say, "It's really not until those unforeseen catastrophic impacts start to either

become apparent that they're going to happen, or that they have happened that

you're got to start immediately thinking outside the box.

Participant 1047 describes how he views the distinction between a catastrophic and a

routine incident as associated with the degree of complexity,

I do not try to get into catastrophic and non-catastrophic because I am a believer

in if your house is destroyed and your family is impacted, that's a catastrophic

disaster to you. I also think about it [the incident] as a catastrophic because to

someone it is. I look at it [catastrophic or routine] is it going to be hard or

complex, but when you look at it as catastrophic, you look at the complexities.

Participant 1080 describes a component associated with a catastrophic incident as the

need for additional capability by a jurisdiction that is overwhelmed by the effects of the

incident, "I think the catastrophic incident is when a particular jurisdiction doesn't have

the capability and the capacity to deal with it." Participant 1018 describes how for a

larger event like a catastrophic incident, the organizations adapt with the establishment of

an Emergency Operations Center, "As we move to larger events like a major hurricane,

we will pull people into the EOC."

Superordinate Theme 3: Importance of Emergency Management Leadership

The role leadership plays in achieving successful outcomes in a catastrophic

incident was a dominant theme among participants. This theme is comprised of (a)

leadership, (b) senior leadership support, (c) facilitating adaptive responses, (d) member

empowerment, (e) mutual trust, and (f) communication. Leadership influence identifies

the role of the participant's ability the exercise leadership actions influencing member and stakeholder actions to mitigate the effects of bureaucracy plays a vital role in catastrophic incidents. Senior leadership support refers to the degree management supports the participant in executing their duties. Leadership influence on member adaptive responses identifies how the participant establishes a culture that facilitates member's ability to exercise adaptive responses in their decision making. The themes of member empowerment and trust consider how the participant's actions create an environment to empower team members to exercise adaptive responses while establishing leader-follower mutual trust. Communication refers to the need identified by participants to constantly communicate with members, management, or stakeholders to convey intent accurately, confirm member perceptions and obtain buy-in when required to avoid delays in decision making.

Theme 3a: Leadership

Eleven participants described how leadership plays a critical role in responding to catastrophic incidents. The ability of emergency management leaders to navigate and mitigate inherent bureaucratic, structural organizing characteristics was identified as an essential requirement in achieving positive outcomes in a catastrophic incident. Participant 1047 describes how emergency management leader's ability to navigate bureaucracies is critical in achieving successful response outcomes, "Maneuvering in a bureaucracy should be an education amongst itself, we see what needs to be changed, you give them [stakeholders] something [to review] right, they are more apt to get on board."

Participants described how effective leadership is a crucial component in supporting the emergency response team and mitigating the limiting factors associated with bureaucracy. When discussing leadership's role in a catastrophic incident, Participant 1075 identifies their primary thought as "How am I going to support the team, because without them we're not going to get anything done." When considering the bureaucratic organizational challenges confronted internally and externally in the emergency management system during catastrophic incidents, Participant 1075 described how they view their role, "My job was to remove obstacles and take all punches." Some participants indicated that the emergency management leader sets the operational tone for their team and coordinates with stakeholders to facilitate response outcomes. When describing an emergency management leader's role in exercising leadership, Participant 1117 indicates, "They [emergency management leaders] are really a communicator of information, but they're also a person who provides a strong command presence and shows empathy, but at the same time can communicate the importance of the disaster."

Theme 3b: Senior Leadership Support

Eight of the participants described how management support of the participant was critical to achieving successful operational outcomes. When expressing how necessary management support is, Participant 1080 indicated, "Your appointing official has got to, show their support for you all the time because unfortunately, humans will gravitate toward people, or will listen to people they think are in a position of power." Participant 1040 described how management actions rallied the emergency response team in support of common emergency management objectives remarking, "Leadership

projects positive reinforcement of the emergency management goals, that when we go into a catastrophic event, opinions are welcomed, but eventually we are all going in the same direction." Participant 1117 and Participant 1075 describe how senior leadership support empowers emergency management leaders to execute their duties,

> Depending upon the way that local leadership buys into the concepts of emergency management, and what their true role is, and how much latitude they [senior leadership] provide or how much emphasis they put on emergency management, dictates what the ultimate outcomes are going to be, not only on the preparedness side but also the activation side. (Participant 1117)
>
> The trust [of the senior leaders] I was carrying into the EOC, I made it very apparent to those people the authority and the backing we had to do our jobs. A lot of times, people don't have the full backing, regardless of what's going to happen, and it makes a big difference when you can walk in there with the support to do the job, you know there's going to be problems, but you got to figure them out. (Participant 1075)

Theme 3c: Facilitating Adaptive Responses

Ten participants describe their role as leaders in shaping an environment that facilitates member and stakeholder adaptability during a catastrophic incident. Participant 1117 remarked,

> As an emergency management director, you are the front person. So, it is your responsibility to have the capabilities, the art of emergency management to go in there and hopefully resolve those issues quickly as you possibly can and get those

people on board with the global plan. As an emergency management director, you got to be able to go in there and to adapt your processes or your method of attack.

Participant 1053 describes how the emergency management leader the criticality of instilling in the team the need for adaptive responses in catastrophic incidents, "Our mentality has to be we're attacking forward, at any moment in time we have to have the ability to change 90 degrees and go a different direction to support the mission" Participant 1003 when describing the importance of adaptive responses to novel challenges associated with catastrophic incidents stated, "You take what you do all the time, and what you're trying to do, and you adapt it to the situation that you're in."

Theme 3d: Member Empowerment

Eight participants described how leadership empowerment of members to make decisions facilitated positive emergency response outcomes. Participant 1018 indicated,

I like to empower them (members) and build decision making on their own kind of problems. Folks you know, sometimes make bad decisions; you try to support them and at the same time redirect them, you get the job done and the objectives completed. You can allow people flexibility to make decisions on their own and handle situations on their own.

Participants 1113 and 1047, when highlighting the need for member initiative, elimination of stove piping decision making and inclusive member decision making indicated,

"We try to let people exercise their initiative, it's not one person makes all the decisions in this organization, certainly not in response, and I think some people try to operate that way and any events we have had you cannot operate that way, can't do that micromanaging, you got to be able to find good people, put them in the job, let them do what they need to do. Your head will explode if you don't do it that way." "The more you can make everybody feel part of the team, the more you can make people have some type of personnel stake in a disaster, and in the solution, you're better off." (Participant 1047)

Describing a philosophy of member empowerment within the organization, participant 1053 indicated, "So our organization has to empower its people to make decisions and not be frozen by fear that the bureaucratic process is going to bog them down."

Theme 3e: Mutual Trust

Eight participants identified that member-follower mutual trust facilitated positive operational outcomes during response operations. When discussing member actions during catastrophic incidents, Participant 1080 described how during a response, "You delegate a lot more authority in the bigger situations and just trust, which I think was easy to do when you done the small stuff." When describing how leadership mitigates bureaucratic rigidity, Participant 1075 stated "You got to have trust, between members, whether it be from years working together, whether it be from taking time to exercise together, the more you know your teammates, their capabilities, the more you're able to solve problems."

Theme 3f: Communication

Eight of the participants identified an emergency management leader's ability to communicate with members and stakeholders as critical for successful response outcomes. When discussing the leadership communication within the emergency management system, Participant 1001 indicated, "Obviously trust is important, talking with people, taking the time even if you're tired, you communicate with people, you include people in meetings make them part of the team, connect them. Participant 1040 added, "It definitely a communications game; you have to communicate all the time, and it's almost exhaustive how much you need to make sure your partners are in line with you and understand the goals of the whole." When discussing the lack of communications among emergency management system stakeholders resulting in negative outcomes, Participant 1003 indicated, "The heads of the agency were not working together, and their staffs were not working together, they were stove piping information, they were not sharing information. So, I established a process that we would learn together and decide together that we would not learn new information in a vacuum and stovepipe it."

Superordinate Theme 4: Relationships Play a Critical Role in Influencing Outcomes in a Catastrophic Incident

All the participants described the importance of building stakeholder relationships to achieve successful operational outcomes during a catastrophic incident. This theme describes the role relationships have in mitigating bureaucratic organizing structure effects and influencing organizational adaptability. One of the participants indicated that stakeholder relationships were critical for developing a culture of trust required for

successful outcomes during a catastrophic incident. Another participant stated

relationships were critical to minimizing cultural barriers when operating in new areas.

Two participants indicated that stakeholder relationships are a critical component of

organizational adaptability. Participant 1047, when describing the need to build and

maintain relationships, remarked, "I look at it as unity of effort, not unity of command,

unity of effort. An emergency manager is continually doing relationship management.

That's what it really comes down to, and you do that through time." The dominant

participant belief was that stakeholder relationships could mitigate the effects of

bureaucracy. Eight participants indicated that developing and managing emergency

management relationships can mitigate bureaucratic influences. Participant 1075, when

describing how relationships mitigate the effects of bureaucratic processes, suggested,

"There are multiple levels of bureaucracy whether you're talking about the Feds, the state

the locals whether they are operational or political, every single component of that is

bureaucracy. So having relationships to cut through that and go directly to the source is

important." Participant 1117 indicated,

> Again, your relationship that you've cultivated with your external agency
>
> stakeholders, even your NGO's, your non-governmental organizations, all those
>
> relationships play into the successful outcome and whether they are going to
>
> follow your lead as an emergency management official or whether they're going
>
> to doubt what you're telling them. So, relationships are everything in this
>
> business.

When discussing the value of relationships to mitigate the effect of bureaucratic structures, Participant 1047 stressed the need for emergency management leaders to establish relationships,

> You've got the bureaucracy, but you got the other layer of how it really works. You got to start pulling those levers before the official lever. You need to have solid plans and processes, but if you have that without solid relationships, it's not going to do any good. I would rather have a solid relationship and a poor plan than the best plan written and not know everybody that needs to implement it.

Superordinate Theme 5: Bureaucratic Organizational Structures Processes for Control Provide a Foundation for Organizational Adaptability

All the participants described how bureaucratic processes, including plans, processes, procedures, and organizational structure, provide the framework of organizational control that forms the foundation for leader-influenced organizational adaptability during a catastrophic incident. The theme reflects how participants viewed operational plans, including the emergency management organizational frameworks followed in those plans as providing a bassline to adapt response operations from during a catastrophic incident. Participants indicated that planning was a crucial foundational process that provided a necessary framework to adapt during a catastrophic incident. Participant 1093 indicated, "Nothing ever goes according to the plan, but you got to have a plan." When describing the need for adaptability in executing a response, Participant 1117 remarked, "The emergency manager has to understand there are certain key aspects that got to take place, particularly when you are in the life safety mode. As an emergency

manager, you got to be able to adapt your processes or your method of attack, so to speak. The participant described this balance as the "art of emergency management." Participant 1003 described his experience of how the emergency management structure facilitates adaptability,

> In my experience, the more organized things are, the more structured they are, the better the response goes because it actually gives you, this may sound counterintuitive, but it (structure) it gives you more flexibility because you have the mechanics of the response already established, you're not having to figure out how to do the big stuff, you just got to figure out how to answer those calls for help. You don't have to figure out how to talk to people and the right person for this and that. That's already determined through the structure. You just got to figure out how to execute. Having contingency plans against potential scenarios that are adaptable…. makes an enormous difference.

> Participant 1117 indicated "I don't believe in emergency management you can

write a step one, step two, do this step, step three, do that plan it's too ridged, so you have to develop a framework of mechanisms to kind of glide slop your effort, your plan is adaptable enough to whatever the circumstances." Participant 1010 indicated the plan "Is a good reference point, a foundation to work from, but if it's not working for this particular event, you make adjustments on the fly and then fix the plan later."

> Participant 1001 indicated,

> The state operates with a Comprehensive Emergency Management Plan (CEMP); it's not all the answers to every incident or everything we do, but it lays out a very

defined structure of the EOC. Now you get an exception, that's the beauty of having a team in the State EOC, a specific problem we can start pulling people out of the emergency support function and get it resolved.

Participant 1018 describes the need for flexibility in your structure, "One of the principles of the Incident Command System (ICS) is that your structure is scalable and flexible enough to add on as you see fit based on what your needs are and what your hazard analysis is telling you." When discussing how the agency responds to catastrophic incidents with the formation of a State Emergency Response Team Participant 1075 describes the process followed,

> I think one of the beauties of the agency is the way it responds to catastrophic incidents, bring together cross-functional members from across state government, there's both rigidity and flexibility in the process and procedures. No plan survives first contact, and with a catastrophic incident it's the same, and so you want to have the flexibility within your systems to go off script.

Superordinate Theme 6: A Catastrophic Incident Forces the Organization's Structure to Adapt

All the participants indicated the effects of a catastrophic incident resulted in adapting the bureaucratic organizing structure process and procedures. Most organizational structures adapt during a catastrophic incident when they form an Emergency Operations Center. Process and procedures go through a degree of adaptation to meet the novel challenge associated with the effects of the catastrophic incident. Participant 1040 indicated, "Yeah, it [catastrophic incident] doesn't leave us room to be

rigid. You have to remain flexible with each incident because there's something different with each one". Participant 1080 described how in a catastrophic incident, "You have a problem that could potentially cost lives you got to operate outside the box and stuff like that." When discussing the organization's emergency management framework for response operations, Participant 1113 indicated, "Well the bottom line is, for most of it, [Covid 19 response] we used our existing [emergency management] framework, but we did have to modify some of it, and it was done in terms of additional plans and protocols." Participant 1053 indicated "As far as organizational structure, the organization needs to make sure it has the flexibility." Participant 1001 described how during a catastrophic incident the organization "Takes on a more task-organized structure with the establishment of the State Emergency Response Team, a capabilities-based structure." in the EOC. Participant 1003 described how he needed to identify a trigger to begin adapting from the routine in a catastrophic incident, "The trick to me is really knowing when your normal processes are going to be overwhelmed by a catastrophic event. So, it goes back to being able to identify that your routine procedures are not going to be up to the challenge and being adaptable enough to shift."

Superordinate Theme 7: The Bureaucratic Organizing Culture Can Influence Member Behaviors and Response Outcomes

This superordinate theme describes how participants perceive the effects of bureaucratic organizational can influence member behavior and emergency management responses. This theme includes the organizational culture's negative influence on member behavior, adaptive responses, and operational outcomes. The negative effect on

member behavior reflects the participants' feelings that the culture of a bureaucratic organizing structure can inhibit member decision-making based on possible repercussions. An organizational culture influenced by leader actions to facilitate adaptive responses can be conducive to member adaptive responses and positive operations outcomes.

Theme 7a: Negative Influence on Member Behavior

Seven of the participants indicated the consequences of making a mistake inhibited member decision-making. Participant 1080, in describing the effect of bureaucratic culture on member decision making, suggested, "I do kind of get a little bit frustrated with bureaucracies in that it takes away their [member] ability to lead, for fear of negative repercussions from their [member] decision making. Participant 1093 indicated,

> The effects of bureaucracy are, of course, the culture of bureaucracy in an organization. People are going to do what you re-enforce them to do, and if you reinforce them not to make decisions, they are not going to make decisions, even though in a disaster, it's very important that they make fast decisions [during a catastrophic incident].

Participant 1003 stated, "You know they [emergency management leaders] are appointees if they made a mistake, the leadership could fire them. They did not want to make a mistake, and in that fear, they made the worst mistake and did nothing."

Subtheme 7b: Bureaucratic Culture Can Influence Member Adaptive Responses and

Operational Outcomes

All participants described the influence organizational culture has on executing response operations in catastrophic incidents. The organizational culture influences member actions that can impact the outcomes of response operations. In describing the type of culture required for operational success, Participant 1003 stated, "If you develop a culture within that [bureaucratic] structure of adaptability and being proactive, it enables you to make the jump to catastrophic and the more unknown because you got confidence in your capabilities." Participant 1117 added when you develop a culture of,

> We understand you're going to fail, and we're going to stand the ground with you, you just tell us what you need. We are going to support you, and if anything goes bad, we got you; this provides the emergency management team with the understanding that they can make decisions based on the best possible information they have.

Participant 1047 describes the need for a no-fault environment with an emphasis on mission accomplishment "I think that you build a culture in emergency management by showing teammates what they do matters and how it fits into the bigger picture. As an Emergency Management Leader, be humble. I made a lot of mistakes, very few mistakes cannot be adjusted quickly. Blame the disaster, not the people."

Superordinate Theme 8: Member Experience Influences Successful Outcomes

Eight participants described how the member experience responding to previous incidents facilitated the ability of the organization to respond to new ones. Participants

told how incident response experience allowed members to mitigate the effects of catastrophic incidents easier than organizations with less member experience. Participant 1010 describes how experience influences response outcomes,

> So, we have been through this with tropical events and weather events. So, I have to start saying it was easier for us, but it's probably easier for us than others who don't have the muscle movement experience of dealing with disasters like we have.

When discussing the challenges associated with ineffective agency bureaucratic processes, Participant 1003 described how his experience allowed him to navigate through challenges confronted, "I knew how to fix things, and I knew what we needed to do based on years of training and experience."

Summary

Twelve individuals participated in this study exploring the lived experiences of emergency management leaders responding to a catastrophic incident. Nine superordinate and fourteen subordinate themes were identified and analyzed guided by study research questions. There were eight superordinate themes identified in the study. These themes included (a) bureaucratic organizational structures can be a limiting factor during a catastrophic incident, (b) the incident context influences leaders perception of requirements, (c) the importance of emergency management leadership, (d) stakeholder relationships are critical during catastrophic incidents, (e) bureaucratic structures processes for control provide a foundation for organizational adaptability, (f) a catastrophic incident forces organizational structural adaptation, (f) the bureaucratic

organizing culture can influence member behaviors, (g) member experience influences

successful outcomes. In Chapter 5, I will be discussing the interpretation of my data

analysis, study findings, implications for future research, and social change.

Additionally, I will discuss the limitations of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to explore the lived experiences of emergency management leaders exercising leadership responding to catastrophic disasters. An IPA approach in the hermeneutic tradition was used for this study. A complexity leadership theoretical lens informed the study's conceptual framework exploring the relationship between bureaucratic structures and an emergency management leader's ability to exercise adaptive responses. The study was conducted to understand better the influence of bureaucratic, structural control mechanisms, and the emergency management leader's ability to exercise adaptive responses in catastrophic incidents. As Kapucu and Garayev, (2016) suggest, an emergency management leader's inability to exercise adaptive responses in catastrophic incidents can be a limiting factor in achieving successful response outcomes.

The study findings presented in Chapter 4 were similar to the current body of knowledge presented in Chapter 2. Still, they extended this knowledge by discussing mechanisms to mitigate bureaucratic processes based on the experiences of the study participants. Chapter 5 discusses the interpretation of key study findings broken down by theme, study limitations, the study's influence on positive social change, recommendations for practical application, a discussion of the conceptual framework, and conclusion.

Interpretation of Findings

The study participants provided an in-depth description of their lived experiences during a catastrophic incident where eight themes were identified. Complexity leadership

theory informed my conceptual framework used in the study by providing a tool to better understand stakeholder interactions in a system where the emergence of novel solutions results from the conflict that arises from the need to exercise bureaucratic and adaptive leadership. The following is a discussion of the study findings based on the body of knowledge presented in this study, and the participants lived experiences.

The Effects of Bureaucratic Organizational Structures Can Be a Limiting Factor During Catastrophic Incidents

A consistent theme in the research literature is that bureaucratic organizational structural characteristics can limit organizational adaptability and influence successful response outcomes during a catastrophic incident (Jovita & Nurmandi, 2018; Jung et al., 2018; Takeda & Helms, 2006a; Takeda & Helms, 2006b; Wukich & Robinson, 2013;). All the study participants indicated the organizational processes associated with bureaucratic structures could be a limiting factor during catastrophic incidents if not mitigated. The participants described how it is incumbent for successful outcomes that emergency management leaders understand the influence of and mitigate the bureaucratic constraints that may be confronted during a catastrophic incident. When faced with bureaucratic operational constraints, participants described how emergency management leader decisiveness and processes adaptation were critical skills needed to achieve required outcomes in a catastrophic incident. As some participants indicated, the bureaucratic organizational challenges are not limited to the emergency management leader's organization but can be characteristic of stakeholders within the emergency management network responding to the catastrophic incident.

In a 2017 study, Kapucu and Demiroz explored organizations within emergency management networks. The authors found the limiting effects of bureaucratic organizational structures can be characteristic of emergency management stakeholders' organizations operating in networks throughout the emergency management system during a catastrophic incident. As the complexity of a catastrophic incident grows, so too does the number of organizations required to provide support (Kapucu & Demiroz, 2017). The effectiveness of an emergency management leader requires establishing unity of effort with stakeholders and working through bureaucracy, even if it's external to your organization. The participants described how an emergency management leader must learn to develop relationships with external stakeholders operating at levels of organizational bureaucracy throughout the emergency management system to achieve the unity of effort necessary for successful outcomes.

Some participants described how the organization's size influenced the degree of bureaucracy. The larger the organization, the greater the bureaucratic influence. As a result, participants suggested that it was easier to mitigate the effects of bureaucracy in smaller emergency management organizations.

The participant's experiences suggest that effective response operations require emergency management leaders to navigate layers of bureaucracy in a catastrophic incident. Since most participants of this study were seasoned emergency management leaders, does the level of experience influence the ability of emergency managers to navigate the challenges associated with bureaucratic organizing structures? It appears from the participant's experiences it does influence adaptive responses.

The Context of the Human-Caused or Natural Disaster Influences Leader

Perception of What Is Required

A dominant theme among study participants was how the context of routine emergencies and catastrophic incidents influenced how emergency management leaders perceived their effect on the organization. Most participants described how routine emergencies were primarily addressed at the local first responder level following SOPs with organic resources. As Nohrestedt (2016) and Jiang and Yuan (2019) found, because of the limited effects on societal systems, routine emergencies are mitigated through existing plans or by local first responders following SOPs.

As Broska et al. (2020) suggested, a catastrophic incident overwhelms the emergency management system and degrades the system's ability to function effectively. A catastrophic incident forces organizations to adapt based on the novel challenges confronted (Wukich & Robinson, 2013). In a catastrophic incident, most participants indicated the organizational structure is forced to adapt to address the overwhelming effects on the emergency management system. This organizational adaptation is manifested by establishing an emergency operations center, modifying plans, or integrating additional external resources. The study participants suggested the bureaucratic organizational processes that are effective for routine emergencies cannot meet the requirements for catastrophic incidents. A catastrophic incident requires an emergency management leader to facilitate organizational adaptation compared to a routine incident requiring minimal to none.

Importance of Emergency Management Leadership

The importance of effective leadership during a catastrophic incident was a dominant theme with participants. Emergency management leaders in catastrophic incidents need to exercise adaptive responses and operational flexibility (Strandth & Eklund, 2018). Johannessen's (2017) study suggests that in catastrophic incidents, emergency management leaders' ability to adapt and improvise to meet the challenges associated with the effects of a catastrophic incident was critical for achieving required outcomes. Emergency management resists the urge to control the situation with bureaucratic processes and procedures (Christian et al., 2016). Most participants felt a critical leadership skill associated with effective emergency management leaders was their ability to navigate and mitigate the inherent bureaucratic processes and adapt to the catastrophic effects on the operational system. Establishing equilibrium between the need to control and adaptive responses plays a critical role during a catastrophic incident.

Effective leadership's role at the various organizational levels was important for successful response outcomes. Participants described how important it was for the appointed or designated leader at the next level within the organization to support them during a catastrophic incident. This support empowered the emergency management leader and suggested effective leadership support is critical at every level within an organization to achieve required outcomes.

For many of the participants, the role of an emergency management leader was to shape an environment where members are empowered to exercise adaptive responses and, where possible, build relationships with stakeholders before a catastrophic incident.

As Takeda and Helms (2006a, 2006b) study indicate, the leadership style of the

emergency management leader shapes acceptable leader-follower behavior for problem-

solving. Many study participants described how a critical emergency management leader

requirement to shape culture for acceptance and cultivation of member activities leader to

adaptive responses. Participants described the importance of establishing an

organizational culture where members were empowered to make decisions and develop

mutual trust.

In Kapucu and Ustun's (2018) study, the authors identified skills, traits, and

behaviors similar to what study participants described as needed for effective crises

leadership. Some of these traits included (a) the ability to manage innovation, (b) being

an effective communicator, (c) the ability to motivate followers, and (d) teambuilding. In

addition, participants stressed emergency management leaders needed to convey to

members and stakeholders an understanding of the situation, articulate the operational

challenges confronted, and be effective communicators.

Relationships Play a Critical Role in Influencing Outcomes in a Catastrophic

Incident

Stakeholder relationships in emergency management are critical for achieving

successful outcomes during a catastrophic incident (Kapucu etal., 2010; Kapucu &

Garayevm, 2013; Kapucu & Hu, 2016; Robinson et al., 2013). As the complexity and

size of an incident grow, so does the number of stakeholders within the response network.

The requirement for developing stakeholder relationships and their value for coordinating

and executing response operations during catastrophic incidents was a recurring theme

among the study participants. Participants in the study unanimously agreed building and cultivating stakeholder relationships were critical to achieving successful response outcomes.

As Kapucu and Demiroz's (2017) study suggests, many barriers to building effective networks are bureaucratic stakeholder organizing structures in the emergency management system. Although recognizing the negative influence bureaucratic organizing has on successful operational outcomes, most participants described how relationships provided a mechanism to mitigate bureaucratic organizing processes to get requirements accomplished. They explained how a significant benefit of relationships was cutting through bureaucracy.

Relationship development provided additional benefits to support response efforts. One of the participants identified how relationships facilitated a culture of trust among members and stakeholders. In comparison, two others described how relationships facilitated organizational adaptability.

The Bureaucratic Organizing Structure Provides a Foundation for Adaptation

Andrew et al.'s (2018) study findings that the structure provided by formalized processes within bureaucratic structures provided a foundation for organizational adaptation was a dominant theme with all of the study participants. Participants described how the emergency management framework established by codified plans and procedures provided a baseline to adapt from to meet the novel challenges resulting from the effects of a catastrophic incident. From the participant's perspective, the goal of the emergency management leader was to balance the bureaucratic process of control with

the requirement to adapt to meet the challenges confronted. When the two were in equilibrium, bureaucratic processes contributed to successful operational outcomes by providing a degree of control without constraining adaptive responses.

A Catastrophic Incident Forces Organizational Structural Adaptation

Punctuated change on societal systems at the local, state, or federal level from the effects of a catastrophic incident triggers organizational structural adaptation (Banica, Kourtit, & Nijkamp, 2020; Brouillette and Quarantelli,1971). In my research findings, all the participants described how the effects of a catastrophic incident caused a degree of bureaucratic, structural adaptation from routine day-to-day operations. While most participants indicated the structure remained within the boundaries of the established emergency management framework, there was a consistent requirement for structural adaptation. This bureaucratic, structural adaptation ranged from establishing an EOC designed to coordinate response efforts to modification of processes, procedures, or plans to address the novel challenges confronted. Participants described how the effects of a catastrophic incident leave little room for rigidity in methods of operation characteristic of bureaucratic processes. To maintain a rigid and inflexible organizing methodology would not support the need for adaptive responses necessary in catastrophic incidents.

The Bureaucratic Organizing Culture Can Influence Member Behaviors and Response Outcomes

During a catastrophic incident, the inherent characteristics of organizational bureaucracies can perpetuate a culture where member perceptions of possible repercussions and the requirement to conform within acceptable boundaries results in fear

of making a decision. In their study, Jovita and Nurmandi (2018) described this phenomenon as bureaucratic inertia. Members exhibiting bureaucratic inertia fear making mistakes that violate what they perceive as a decision outside acceptable organizational boundaries. This phenomenon results in ineffective decision making (Jovita and Nurmandi, 2018). Most of the study participants described how the culture of bureaucratic organizations in emergency management resulted in some degree of bureaucratic inertia. They explained how the perceived consequences of the organization's bureaucratic cultural norms resulted in ineffective decision-making. Specifically, a member's fear of repercussions contributed to their inability to make effective or any decisions during catastrophic incidents.

A culture where member's fears of repercussions result in solutions with a basis in what is acceptable to cultural norms and lack member discretionary decision-making can result in degraded response operations during a catastrophic incident (Jung et al. 2018; Jin & Song (2017). As some participants indicated, emergency management leaders must overcome their fear of being fired for making a mistake and exercise a leadership style conducive to effective member problem solving.

As previously indicated in the literature review, bureaucratic organizational culture limits organizational adaptability and members' ability to exercise adaptive responses, negatively influencing response operations in a catastrophic incident (See Jin & Song, 2017; Jin et al., 2018; Takeda & Helms, 2006a, 2006b). All participants described how the culture of the organization influences member actions. Left unchecked, a bureaucratic structure can limit adaptive responses and constrain decision

making. The emergency management leader has the burden to establish a culture to mitigate the limiting effects of bureaucracy. Participants indicated one role of an emergency management leader is to shape a culture that facilitates adaptive member responses and proactiveness within a no-fault environment to enable successful organizational outcomes.

Member Experience Influences Successful Outcomes

All the participants, except one, had many years of experience in emergency management. Many of the leadership challenges identified in the literature can be moderated by emergency management leader's level of experience (see Cutter, 2019, Harrald, 2020, Light 2011, Roberts et al., 2020). The effect of a member's previous experienced responding to catastrophic incidents had on facilitating successful outcomes during future ones was a dominant theme for many participants. Emergency management experience was not only a factor from an operational aspect. Some participants indicated that member experience also provided a mechanism to navigate bureaucratic challenges better when confronted.

Complexity Leadership Conceptual Framework

When applied to the emergency management leader's ecosystem, the complexity leadership conceptual framework provides a mechanism to examine the study findings from a leadership and organizational systems approach. The framework suggests organizational adaptability results from two components of leadership, entrepreneurial (innovation) and operational (process, control), coming into conflict when under external pressure (Uhl-Bien, 2021, Uhl-Bien & Arena, 2018). This conflict results in system

disequilibrium. The resulting tension requires leadership to balance a move toward bureaucratic control processes and the need for potential adaptive solutions to solve confronted challenges (Uhl-Bien, 2021, Uhl-Bien & Arena's 2018). The emergence of viable adaptive potential solutions results from leadership's management of tension toward an adaptive response (Uhl-Bien, 2021, Uhl-Bien & Arena's 2018).

The study findings suggest that the organizational system influenced by the emergency management leader, when faced with an external pressure associated with the effects of a catastrophic incident, adapts to meet the novel challenges confronted. The study's findings indicate that an emergency management leader manages the emergency management organizational system to achieve successful operational outcomes by exercising both operational and entrepreneurial leadership. The conflict resulting from the pressure exerted on the system results in the emergence of adaptive responses. Participants indicated that the mechanisms for control characteristic of operational leadership provided a framework for routine and catastrophic incidents. The pressure on the system from the effects of a catastrophic incident resulted in conflict between operational leadership that sufficed for routine operations and the need for emergency management leaders to exercise entrepreneurial leadership necessary for catastrophic incidents. The emergence of novel solutions, including some bureaucratic processes, resulted in adaptive responses. The adaptive responses included modified organizational structures, plans, or processes.

The findings also suggest ineffective management of the bureaucratic and adaptive response equilibrium by emergency management leaders focused on increased

reliance on bureaucratic mechanisms for control associated with rigid structures or

processes that impeded the organization's ability to achieve successful outcomes in a

catastrophic incident. For example, emergency management organizations that were

unable to modify bureaucratic processes were challenged to achieve successful results

during a catastrophic incident associated with COVID-19 because they relied on

bureaucratic processes to deal with the novel effects of a catastrophic incident.

Emergency management leaders were unable to create an environment that successfully

exercised entrepreneurial leadership with operational leadership for adaptive responses to

emerge.

Limitations of the Study

The study is not without limitations. First, the study sample population is limited

to emergency management leaders operating in the Southeastern United States who have

led or supported response operations during a catastrophic incident within the last five

years. Because of the unique operational environment selected and sample size, the study

findings will not be generalizable to other emergency management leaders in different

areas of the country. Second, because all the participants identified as White, there is no

racial diversity among study participants. The lack of diversity limits the study by not

exploring how race may have influenced the lived experiences of emergency

management leaders during a catastrophic incident.

An IPA research methodology has also been criticized for what are perceived to

be limitations of this research approach. First, researchers have called into question

whether the ability of the study participant and the researcher to effectively communicate

experiences with the requisite detail to truly understand the meaning of the experience conveyed (Willig, 2013). As Tuffour (2017) suggests, this limitation was overcome in this study by increased diligence in collecting rich and detailed information from study participants.

Recommendations

The study's purposeful sample population was twelve emergency management leaders operating in the Southeastern United States who have led or supported response operations during a catastrophic incident. Future research should be considered with replicating this study to a larger sample population from multiple regions of the United States to increase understanding of the differences or similarities in the experiences of emergency management leaders. The increased sample size could also contribute to the transferability of the study findings.

All study participants identified as White in this study. A participant's race could influence their experiences and subsequent interpretation of those lived experiences (Boehme et al., 2022; Chenane, et al., 2020; Jamieson et al., 2020; Joselyne et al., 2004; Wright & Gibson, 2020). Increasing the diversity of the sample size could provide an increased understanding of whether a participant's race affects their experiences in relation to the phenomena. Future research should include replicating the study with a more diverse sample of participants.

Future research could further this study's findings by using a quantitative approach. A qualitative approach will test relationships between defined variables (Bloomfield & Fisher, 2019). Qualitative research is designed to make an "inference

about the larger population" (p. 24), based on a representative sample using a random sampling technique (Fisher & Bloomfield, 2019). A quantitative approach uses scientific methods to facilitate research objectivity (Davies & Fisher, 2018). Using a quantitative approach could further increase understanding of the study topic by (a) testing the relationship between bureaucratic structures and emergency management leaders ability to exercise adaptive decision making in catastrophic incidents, (b) supporting the generalizability of the study findings to the greater population of emergency management leaders throughout the United States, (c) not relying as heavily on researcher interaction and participant interpretation of their experiences, the approach makes research bias less of a concern.

Implications

Positive Social Change

The economic and societal costs associated with the effects of catastrophic incidents continue to grow annually (Deryugina, 2017). The United Nations Office for Disaster Risk Reduction (2020) report indicates within the last 20 years, there has been a significant increase in disasters resulting in $1.63 trillion in economic losses. With a disproportionate impact on the disadvantaged members of our communities (Cutter, 2019). The current study increased the understanding of the limiting effects bureaucratic structures can have on emergency management leaders confronted with complex catastrophic incidents. The study participants shared how emergency management leaders must mitigate the influence on bureaucratic structures during catastrophic incidents and understand the mechanisms that enable them to do so. The participants

shared experiences confirmed and extended the current research by exploring how these mechanisms are exercised to enable adaptive responses needed for positive response outcomes resulting in a reduction in the number of lives lost and economic severity from the effects of catastrophic incidents. As emergency management leaders more effectively mitigate bureaucratic processes and obtain more effective response outcomes, community resilience is positively impacted.

Practice Implications

The study findings provide emergency management practitioners with an increased understanding of the relationship between bureaucratic structures, adaptive responses, and catastrophic incidents. The study findings identified suggest some practical applications for emergency management practitioners, including:

1. Emergency management leaders should participate in catastrophic incident-specific training to mitigate the lack of experience in responding to catastrophic incidents some emergency management leaders may have. Training should include classroom, Tabletop Exercises (TTX), and Full-Scale Exercises (FSE). Participants should consist of internal and external stakeholders to be part of the training. Exercise design, development, and execution should overwhelm organizational capabilities to the point of failure.

2. Training for emergency management leaders on emergency management stakeholder identification and cultivation. Specific emphasis would be placed on the practical application, including stakeholder identification and engagement. Training emphasis would be on the internal and external

stakeholders within the emergency management leader's area of responsibility.

3. Emergency management leaders should participate in training designed to increase their understanding of organizational culture's effect on response operations. The training modules should include practical exercises that explore the relationship between bureaucratic structures, adaptive responses, and catastrophic incidents. Training should consider strategies to overcome the challenges discussed in this study and how organizational culture can mitigate those challenges.

4. Increase the opportunities for emergency management leaders with minimal experience to be mentored by more senior emergency management leaders to facilitate the exchange of explicit and tacit knowledge critical for responding to a catastrophic incident.

Theoretical Implications

CLT informed the conceptual framework for this study. CLT considers how leadership is exercised in complex adaptive systems (Uhl-Bien & Arena, 2018). The emergency management system representative of the characteristics associated with a complex adaptive system (Uhl-Bien & Arena, 2018). The study was significant to theory in two ways. First, the study findings advance CLT research by increasing the understanding of the relationship between bureaucratic structures and emergency management leader's understanding of how to exercise adaptive responses in catastrophic incidents. Second, applying a complexity leadership theoretical lens to explore the

phenomena within the emergency management domain advances the understanding of the influence complexity leadership theory could have on emergency management leader's knowledge of how to exercise adaptive responses in the context of a catastrophic incident.

Conclusions

Although the current body of literature has explored the influence of bureaucratic structures on organizational and member adaptability, it has not considered how emergency management leaders navigate the organizational bureaucracy to overcome its limiting effects. Emergency management leaders are responsible for coordinating the response to catastrophic incidents in an operational environment where the tension between the need to exercise adaptive responses and inherent bureaucratic processes for control is a common phenomenon. Understanding how to balance the need to mitigate the influence of bureaucratic procedures and exercise adaptive responses during a catastrophic incident is critical to achieving successful outcomes.

The study explored the lived experiences of emergency management leaders who addressed bureaucratic processes and procedures while confronting the need to exercise adaptive responses during catastrophic incidents. The themes uncovered in this exploration included a) the effects of bureaucratic organizational structures can be a limiting factor during a catastrophic incident, b) the context of the human-caused or natural disaster influences perception, c) importance of emergency management leadership, d) relationships play a critical role in influencing outcomes in a catastrophic incident, e) bureaucratic organizational structures processes for control provide a

foundation for organizational adaptability, f) a catastrophic incident forces organizational structural adaptation, g) the bureaucratic organizing culture can have a negative effect on member actions, h) organizational culture within a bureaucracy influences member adaptive responses and operational outcomes, i) member experience influences successful outcomes.

The research provided an increased understanding of emergency management leaders' experiences in an emergency management system comprised of multiple bureaucratic structures. My research goal extends the knowledge on understanding mechanisms for emergency management leaders to exercise adaptive responses and shape an environment conducive to adaptive responses. Developing training programs that transfer the knowledge of more experienced emergency managers will create an opportunity to understand better how to navigate bureaucracy during catastrophic incidents will provide a practical application of the study findings.

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Appendix A: Interview Guide

Participant Name: …………………………………………………………………...

Agency:…………………………………………………………………………………..

Date:…………………………………………………………………………….………..

Interview Script

Good Morning/Afternoon,

I would like to thank you for participating in this study. My name is Tony Riscica, I am a

graduate student at Walden University, and the study is in partial fulfillment of my Ph.D.

We have received your informed consent form. As indicated in the form, participation in

this study is voluntary, all information provided during the interview is kept confidential,

and you may stop at any time during the interview and withdraw from the study. The

interview is scheduled to last for approximately one hour.

The research is designed to understand emergency management leader's experiences as

they respond to catastrophic incidents. The study aims to understand better

organizational challenges and operational challenges that emergency management leaders

may have experienced during response operations to consider how these challenges could

be mitigated.

To capture your responses accurately, I would like to audiotape our interview. Once the

interview is transcribed, I will email it to you to confirm that we have accurately captured

your responses. The only individuals who will have access to the interview data will be committee members and me.

Interview Questions

Background

How long have you worked in your current capacity as an Emergency Manager or senior member of the emergency response team?

What catastrophic incidents were you in a leadership position for?

What position did you hold?

Topic Questions

Topic I: RQ1. What are the lived experiences of emergency management leaders in catastrophic disasters given the bureaucratic organizational structures in which they operate?

Tell me about your experience as an emergency management leader?

- At what level, county, state, federal have you worked as an emergency management leader?

What are some of the emergency management organizations you have worked for?

- What was the organizational structure like? Structured or Unstructured?

- How did you feel the organizational structure supported routine response operations? Catastrophic? Why?

- Can you give me some examples based on your experiences?

What are some of your experiences as an emergency management leader responding to a catastrophic incident?

- Based on your experiences, do catastrophic incidents differ from routine responses? Please explain?

- What are some of your experiences with organizational processes and procedures during catastrophic incidents? Are organizational processes and procedures different in routine and catastrophic incidents? If yes, can you tell me any examples where these processes and procedures differed or influenced the response?

- As an emergency management leader, how do you feel organizational processes and procedures influence responses to catastrophic incidents? Can you provide some examples?

What are some of the management challenges confronted during your response to the catastrophic incident? Can you provide any examples?

- How do you feel the organizational structure influenced the management challenges confronted?

- What are some of your experiences as an emergency management leader when confronted with these challenges? Can you provide some examples?

How do you feel the organizational structure influenced your decision making during catastrophic incidents?

- Can you tell me about some of your experiences?

- How do you feel the organizational structure influenced your decision-making ability? Can you give me some examples?

Topic II RQ2. How do emergency management leaders find equilibrium between bureaucratic organizing processes and the need for adaptive responses in catastrophic incidents?

How do you feel defined processes and procedures characteristic bureaucratic organizational processes in emergency management influence your ability to adapt to any challenges that may be confronted during routine and catastrophic incidents?

- Can you tell me about some of your experiences?

- Was the response outcome positive or negative? Why?

Topic III RQ3. How does member behavior in bureaucratic structures influence emergency management leader decision making?

How do you feel an emergency management organization's culture influences emergency management leaders and subordinate actions during a response to a catastrophic incident?

- Can you tell me about some of your experiences?

- If positive, why? If negative, why?