

2023

Cross-Sectional Collaboration in Florida's Emergency Management System

Christopher Stephen Kirkland
Walden University

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>



Part of the [Public Administration Commons](#), and the [Public Policy Commons](#)

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Health Sciences and Public Policy

This is to certify that the doctoral dissertation by

Christopher Kirkland

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee

Dr. Bruce Lindsay, Committee Chairperson,
Public Policy and Administration Faculty

Dr. Laima Warnecke, Committee Member,
Public Policy and Administration Faculty

Dr. Lydia Forsythe, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2023

Abstract

Cross-Sectional Collaboration in Florida's Emergency Management System

by

Christopher Kirkland

M. Phil, Walden University, 2020

MS, Troy State University, 1999

BBA, Edward Waters College, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

February 2023

Abstract

Florida faces a unique set of emergency management hazards prompted by the state's geography, high volume of tourism, and position as a hub of international trade. The state has developed a highly adaptive emergency management system to deliver humanitarian assistance to Floridians affected by natural and other disasters. Despite the importance of collaboration in delivering humanitarian goods and services to Floridians in times of crisis, little is known as to how collaboration occurs, what impediments exist, and how organizations adapt to the dynamics of natural and other disasters. In this qualitative case study, the integrative framework for collaborative governance was applied to understand how voluntary organizations collaborated during hurricane response and relief efforts. Data were collected from the survey responses of nine voluntary organization emergency managers and after-action reports of county, state, and federal agencies. Data from survey responses and archival sources were analyzed and thematically coded. The findings showed that voluntary organizational collaboration resulted from teamwork, communication, and working towards the same purpose within a structured organizational framework. The key recommendations are that emergency management organizations should consistently provide all-hazards training and exercises to enhance voluntary organizations' response to disasters and to study how collaboration occurs in other states with different emergency management constructs. This study may contribute to positive social change by providing emergency managers with the means to improve humanitarian responses to disasters through a deeper understanding of the collaborative processes involved.

Cross-Sectional Collaboration in Florida's Emergency Management System

by

Christopher Kirkland

M. Phil, Walden University, 2020

MS, Troy State University, 1999

BBA, Edward Waters College, 1993

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

February 2023

Table of Contents

List of Tables	vi
List of Figures	vii
Chapter 1: Introduction to the Study.....	1
Background	3
Problem Statement	5
Purpose of the Study	6
Research Questions	7
Theoretical Framework for the Study	7
Nature of the Study	9
Definition of Terms.....	10
Assumptions.....	12
Scope and Delimitations	12
Limitations	12
Significance.....	13
Summary	14
Chapter 2: Literature Review	15
Literature Search Strategy.....	17
IFCG	18
Background and Tenets of the IFCG	18
Applicability of the IFCG to This Study.....	23

Use of the IFCG Framework in Studies Unrelated to Emergency	
Management.....	24
Collaboration.....	28
Voluntary Organization Collaboration in Emergency Management	28
Collaboration in the Field of Emergency Management.....	34
Voluntary Organization Collaboration in Fields Unrelated to Emergency	
Management.....	39
Interagency Collaboration.....	42
Collaboration Between Private Sector Organizations.....	44
Common Themes and Limits of Collaborative Efforts.....	46
Common Themes Found Throughout the Literature	46
Factors That Limit Collaborative Efforts.....	50
Emergency Support Functions.....	54
Voluntary and Nonprofit Organizations in Emergency Management	56
Conclusion	59
Synthesis of the Literature	59
Common Areas of Agreement	59
Summary.....	62
Chapter 3: Research Method.....	63
Research Design and Rationale	63
Research Questions.....	63
Justification of Approach to the Study.....	64

Research Tradition and Rationale for Selecting the Case Study Design	64
Role of the Researcher	65
Relationship of Researcher to Participants	66
Researcher Bias and Potential Ethical Issues.....	66
Methodology	66
Participants.....	66
Sample Size.....	68
Data Collection Plan for Survey Instrument.....	68
Survey Questions	68
Data Analysis Plan for Survey Questions	68
Role of IFCG Components	71
Detailing Relationships Between Dependent Variables and the	
Independent Variable	71
Data Collection Plan for Archival Documents	74
Date Analysis Plan for Archival Documents	75
Issues of Trustworthiness.....	76
Ethical Issues	77
Summary	78
Chapter 4: Results	79
Research Questions	79
Demographics and Data Collection	80
Data Analysis	80

Survey Question Data Analysis	80
Archival Document Analysis	83
Evidence of Trustworthiness.....	84
Credibility	84
Transferability.....	85
Dependability.....	85
Results.....	85
Research Question 1	86
Research Question 2	87
Survey Question Responses by Component	87
Capacity for Joint Action.....	89
Survey Question Regarding Communication	90
Major Themes Emerging From Survey Responses	91
Major Themes Emerging From Archival Documents	94
Findings and Summary	96
Chapter 5: Discussion, Conclusions, and Recommendations.....	99
Interpretation of the Findings.....	99
Research Question 1	99
Research Question 2	100
Applicability of Findings to Theory	102
Limitations of the Study.....	103
Recommendations.....	104

Provide Training and Hold Frequent Exercises Involving ESF-15	
Organizations	104
All-Hazards Training and Exercises Involving ESF-15 Organizations	105
Apply the IFCG to Other Geographical Areas	106
Social Change Implications	107
Conclusion	108
References.....	109
Appendix A: List of ESF-15 Voluntary Organizations	125
Appendix B: ESF-15 Collaboration Questionnaire	127

List of Tables

Table 1. Elements Indicating the Presence of Collaboration by Component 71

List of Figures

Figure 1. Depiction of IFCG Framework	21
Figure 2. Template Depicting Relationships Between the Independent Variable and a Dependent Variable	72
Figure 3. Process of Developing Themes to Survey Question Responses	82
Figure 4. Process of Developing Themes From Archival Data	84
Figure 5. Presence of the Elements of Principled Engagement and Their Impact on Collaboration.....	88
Figure 6. Presence of the Elements of Shared Motivation and Their Impact on Collaboration.....	89
Figure 7. Presence of the Elements of Capacity for Joint Action and Their Impact on Collaboration.....	90

Chapter 1: Introduction to the Study

One of the core responsibilities of Florida's state government is the protection of the lives, property, and individual rights of each Floridian, and accordingly, Florida has developed an emergency management system capable of responding to a broad array of existing and potential threats (Florida Division of Emergency Management, 2020). This system is built along operational lines, whereby response efforts are both coordinated and managed by individual county governments, with assistance and guidance from the Division of Emergency Management (Florida Emergency Management Act 1993/2021).

A vital component of the overarching state emergency management structure is the consolidation of resources, materials, and capabilities into 20 specific categories known as emergency support functions (ESFs), which are similar to the federal ESF structure set forth in the National Response Framework (Florida Division of Emergency Management, 2021; Kapucu & Garayev, 2016). ESFs are designed to address a systemic concern (i.e., transportation, power recovery, search and rescue) and may involve, or depend upon, collaboration between public and voluntary organizations (Choi & Bower, 2006; Prentice et al., 2019). ESF-15: Volunteer Organizations and Donations coordinates 35 voluntary organizations, such as the Salvation Army, American Red Cross, and Florida Goodwill Association (a comprehensive list of voluntary organizations is found in Appendix A). ESF-15 is designed to allow for a more seamless and integrated approach to addressing basic humanitarian needs (i.e., food, clothing, and housing).

As a peninsular state, Florida experiences a diverse array of disasters, including: (a) wildland fires, (b) floods, (c) tropical storms and hurricanes, (d) hazardous material

and oil spills, and (e) pandemics (Florida Department of Law Enforcement, 2021; Florida Division of Emergency Management, 2020; Florida Division of Forestry, 2021). Often, disaster relief and recovery efforts require significant support from voluntary ESF-15 organizations to address both immediate and long-term humanitarian needs of affected Floridians.

One of the critical responsibilities of the ESF-15 function is to facilitate collaboration between voluntary organizations during relief and recovery efforts to disasters (Florida Division of Emergency Management, 2020). Because all disasters in Florida are managed at the county level, many studies have indicated that facilitating collaboration hinges upon a combination of preestablished frameworks, communications, and working relationships between voluntary organizations and governmental officials (Kapucu et al., 2017; Prentice et al., 2019; Sparf & Petridou, 2017; Wu & Chang, 2018). Additionally, other studies have indicated that while collaboration is an integral component of successful disaster response efforts, future research should focus on the internal processes of collaboration as opposed to outcomes (Al Tabba et al., 2019; Martin et al., 2016; Rice, 2018).

In this study, I examined the internal processes of collaboration between voluntary organizations within Florida's ESF-15 function to understand how the processes affect internal collaboration and subsequent outcomes. This chapter includes the introduction, background, problem statement, purpose of the study, a description of the theoretical framework, and the nature of the study. In this chapter, I also provide definitions essential to the study, the assumptions, the scope and delimitations of the study, limitations, the

significance of the study, and potential implications for effecting positive social change before closing with a summary.

Background

Historically, academic literature regarding emergency management collaboration has focused on organizational and systemic aspects of collaboration. In this vein, collaboration was viewed as a product of factors including (a) governmental policy, (b) organizational frameworks, (c) command structure, and (d) leadership (Beran et al., 2016; Emerson et al., 2012). Accordingly, collaboration was viewed in a linear manner wherein collaboration outputs depended solely on organizational structure and systemic interaction (Bryson et al., 2015; Elliot et al., 2015; Emerson & Nabatchi, 2015; Emerson et al., 2012).

As the body of literature regarding emergency management collaboration evolved, many authors posited that a holistic approach to the study of collaboration was needed; moreover, they suggested that internal processes and interactions between organizations within a system ultimately determined the outcomes of collaborative efforts (Ansell & Gash, 2008; Chang, 2018; Curnin, 2018; Emerson et al., 2012; Prentice et al., 2019; Rice, 2018; Shilbury, 2016; Sparf & Petridou, 2017).

Regardless of the approach used to study emergency management collaboration (i.e., systems or internal process based), there appears to be a consensus regarding the elements essential to collaboration. These elements are: (a) understanding the multidimensional nature of collaboration and influence of external factors, (b) the importance of establishing mechanisms to measure collaboration, (c) the elusive nature of

collaboration, (d) the importance of frameworks to collaborative efforts, and (e) similarities between collaboration in other fields and emergency management (Ansell & Gash, 2008; Beran et al., 2016; Bistaraki et al., 2019; Emerson et al., 2012; Kapucu et al., 2017; Northstedt, 2016).

While no studies exist regarding voluntary organization collaboration within an emergency management context in Florida, a few studies have focused on emergency management in the state. While these studies were grounded in organizational and emergency management, they indicated the importance of most of the above listed elements to the collaborative process (Chang, 2018; MacManus & Caruson, 2011).

Despite the paucity of literature regarding voluntary organization collaboration in Florida's emergency management system, similar studies have been conducted in other areas of the United States and abroad. These studies provided critical insights into aspects of internal collaborative processes during disaster responses, including (a) a need for an overarching framework to establish structure and coordinate response efforts, (b) the vital role of established networks as a means of facilitating communication and coordination between organizations, and (c) the importance of relationships between people representing organization involved in response efforts (Kapucu et al., 2017; Sledge & Hammer, 2019; Wu & Chang, 2018).

Studies of voluntary organization collaboration beyond the scope of emergency management also indicated the importance of internal collaborative processes, such as (a) a clear definition of roles, mutual trust, and involvement in the planning process; (b) the importance of existing relationships, organizational capacity, and a willingness to share

information and power; and (c) collaboration is often iterative and requires organizational flexibility and adaptive capacity in order to ensure success (Cheng, 2019; Costa, 2017; Jang et al., 2016).

The importance of effective collaboration between voluntary organizations within Florida's ESF-15 function cannot be understated. In 2021, ESF-15 voluntary organizations responded to numerous declared disasters, including: (a) COVID-19 pandemic relief and vaccination efforts, (b) several tropical storm recovery responses, (c) the Surfside building collapse, (d) tornadoes, (e) floods, and (f) large wildland fires (Federal Emergency Management Agency [FEMA], 2021).

Given the relative absence of information regarding how internal collaborative processes affect voluntary organizations within the ESF-15 and volunteers' perceptions of how what could improve future response efforts, it stands to reason that this study helps further the organization's mission by providing clearer insights into the processes of collaboration.

Problem Statement

From an emergency management perspective, Florida faces a unique set of hazards prompted by the state's unique geography as a semitropical peninsula bordered by two large bodies of water. Additionally, the Floridian economy largely depends on its forests, agriculture industry, tourism, international trade, and service industries to support a population of over 21 million residents in addition to 112 million annual visitors to the state (Florida Division of Emergency Management, 2020).

Organizations including The Salvation Army, American Red Cross, and United Way of Florida all operate under the aegis and direction of Volunteer Florida in tandem with county emergency departments and ultimately the Division of Emergency Management (Florida Division of Emergency Management, 2020). The delivery of humanitarian relief is coordinated through ESF-15 and constitutes an important part of disaster relief and recovery efforts. Collaboration between the 35 organizations within the ESF-15 function is essential to disaster relief and recovery efforts. To date, no academic studies exist regarding how collaboration occurs within the ESF-15 function of Florida's emergency management system and if it could be improved. While some research regarding voluntary organization collaboration in an emergency context has been conducted in other areas of the United States, Europe, and Asia, the topic has not been addressed in Florida (Sledge & Hammer, 2019; Wu & Chang, 2018). Moreover, the studies regarding emergency management collaboration during natural disasters have focused on policy issues, organizational design, leadership, and collaborative outcomes instead of how collaboration occurs in disaster settings (Chang, 2018). As such, the problem was that little is known about the internal processes of collaboration within the ESF-15 function of Florida's emergency management system, how they occur, what impediments exist, and how organizations adapt to dynamic situations through the perspective of those involved in the process.

Purpose of the Study

The purpose of this study was to develop a better understanding of how voluntary organizations collaborate and coordinate their respective efforts within the ESF-15

function of Florida's emergency management system. This was accomplished by employing a case study methodology to examine the collaboration between ESF-15 voluntary organizations during the 2016–2018 emergency response and recovery efforts to Hurricanes Irma, Matthew, and Michael.

Research Questions

The following two research questions guided this study:

Research Question 1: To what extent did collaboration occur between voluntary organizations in response to Hurricanes Irma, Matthew, and Michael?

Research Question 2: What role did the three components of the integrative framework for collaborative governance (IFCG) play in the response?

Theoretical Framework for the Study

In this study, I employed the IFCG outlined by Emerson et al. (2012). This theoretical framework built upon the previous work of Ansell and Gash (2008) that has been used in numerous policy studies exploring the relationships between governmental and nongovernmental entities. According to Emerson et al.'s IFCG, collaborative governance is systemic in nature and driven by a series of dimensions, including (a) overall system construct, (b) governance regime (i.e., rules, procedures, and policies), and (c) collaborative dynamics between organizations within a specific system or a subset thereof. While the first two dimensions listed above are more static when applied to the Florida Administrative Code and Comprehensive Emergency Management Plan (CEMP), the collaborative dynamic dimension warranted further examination because it could

reveal deeper insights into how collaboration and cooperation occurred between voluntary organizations within Florida's ESG-15 function.

Such an examination required a succinct definition of the components necessary for such collaboration to occur within the third or collaborative dynamic dimension. Three components must be present in order for collaboration to occur within the third dimension: (a) principled engagement between organizational participants, (b) shared motivation built upon trust and mutual understanding, and (c) capacity for joint action based on integrated efforts towards achieving desired outcomes. Effective collaboration occurs as a result of the interaction between organizations as they work towards developing these components (Emerson et al., 2012). The development of specific components is an iterative process whereby collaboration evolves with the successive development of each component and concomitant elements nestled within each component. Principled engagement is the quintessential component of the IFCG. As such, elements associated with this component center on establishing parameters and boundaries for communications and interactions between organizations, including (a) discovery of mutual interests and shared values, (b) definition of common purpose and mutual terminology that can be understood by all parties, (c) deliberation as to the role of each organization and as a means of solving disputes, and (d) determination as to how to make decisions and proceed as a group (Emerson et al., 2012). Shared motivation is an outgrowth of the iterative process and can be grouped into the following categories: (a) mutual trust developed through working together to establish lines of communication and common procedures; (b) understanding the capabilities, limitations and respective

mission of other organizations; (c) internal legitimacy through acknowledging that individual organizations are credible parts of the broader organization; and (d) commitment to crossing organizational boundaries and a common course of action (Emerson et al., 2012). Capacity for joint action is the final step of the iterative movement towards collaboration between organizations, and this is reflected in elements geared towards unified action, including (a) procedures for institutional arrangements established that administer and manage actions, (b) leadership roles established with clearly defined organizational responsibilities, (c) knowledge shared between organizations, and (d) resources and power shared between organizations (Emerson et al., 2012).

In this study, I adapted the work of Emerson et al. (2012) and applied it to focus on the collaboration between voluntary organizations. This was accomplished by testing, through document reviews and surveys of key voluntary organizational personnel, the degree to which the components and concomitant elements of IFCG were present during the 2016–2018 hurricane response efforts to Hurricanes Irma, Matthew, and Michael. I coded and analyzed the data collected from the surveys and document reviews to test whether collaboration occurred as a result of the iterative development of components associated with IFCG.

Nature of the Study

In this qualitative study, I conducted a case study of the 35 voluntary organizations that participated in Florida's response efforts to Hurricanes Irma, Matthew, and Michael. The case study methodology was selected for three reasons: (a) a case study

aims to elicit what happened during events bounded in time, location, and other contextual factors; (b) the case study approach allowed for the exploration of how collaboration occurred from the views of those with firsthand knowledge of the event; and (3) a case study allowed for the triangulation of data gathered through interviews, surveys, and archival document review to provide a comprehensive picture of what occurred (see Creswell et al., 2007, Toma, 2014).

I distributed survey questionnaires to personnel from the 35 voluntary ESF-15 organizations that responded to Hurricanes Irma, Matthew, and Michael. Survey questionnaire results were triangulated with archival data derived from after-action reports, legislative committee documents and testimony, Florida Division of Emergency Management analysis, and reports from Florida county emergency management organizations directly impacted by Irma, Matthew, and Michael. I used the findings derived from the triangulation of archival and survey data to develop a narrative of how voluntary collaboration occurred during the responses to Hurricanes Irma, Matthew, and Michael (see Yin, 2011).

Definition of Terms

Collaboration: The process whereby separate organizations work together to achieve a common goal or purpose (Ansell & Gash, 2008; Emerson et al., 2012; Kapucu et al., 2017; Moshtari & Goncales, 2016; Thomson & Perry, 2006; Wu & Chang, 2018).

Disaster: An emergency causing immense damage, significant loss of life, or of a degree of severity necessitating a declaration of disaster by a county government, the

Florida governor, or president of the United States (Florida Emergency Management Act 1974/2021).

Emergency management: The process of preparing, coordinating, responding, recovering, and mitigating emergencies or disasters that threaten life, property, or civil order (Chang, 2018; Prentice et al., 2019).

ESF: These functions serve as a means of consolidating organizations, resources, and personnel by function in order to address specific needs, such as transportation, utilities, law enforcement, and search and rescue, during disaster response and recovery efforts (FEMA, 2021; Florida Division of Emergency Management, 2020).

Florida CEMP: The overarching document detailing how Florida prepares for, responds to, and coordinates emergency response efforts at local and state levels. The Florida Division of Emergency Management develops the plan with input from the municipal, county, school districts, and the federal government (Florida Division of Emergency Management, 2020).

Florida Division of Emergency Management: The organization responsible for coordinating state emergency management efforts with state agencies, municipal and county governments, school districts, and the federal government (Florida Emergency Management Act, 1993/2021).

Voluntary organizations: For the purpose of this study, the term voluntary organizations represented nongovernmental organizations whose sole purpose was to provide humanitarian relief to those affected by disasters or other emergencies. In

Florida, all these organizations are housed under the ESF-15 function (Florida Division of Emergency Management, 2020).

Assumptions

In this study, I assumed that (a) respondents were able to provide their version of how collaboration occurred within the context of emergency response efforts, (b) they gave honest and forthright recollections of their experiences, and (c) their responses would provide insight as to how collaboration occurred within ESF-15 disaster response efforts.

Scope and Delimitations

The scope of this study was focused on the internal processes of collaboration within a subset of Florida's emergency management system. I narrowed the focus to only one emergency support function because studying the system as a whole would involve understanding collaboration in the context of different missions, structures, and organizations of Florida's 19 other ESFs.

While limited in scope, this study's findings will be transferable to future studies of internal collaborative processes given the focus on understanding collaboration through the lens of those involved in the process. Future studies could adapt elements of this study to examine the internal collaborative process in different emergency management systems or other disciplines.

Limitations

The main limitation to this study was that it focused on what occurred within the context of a subset of Florida's emergency management system. As such, future studies

done outside of Florida will need to take into account a variety of factors, including (a) the structure of other emergency management systems; (b) cultural and organizational barriers; (c) legal, policy, and procedural differences; and (d) volunteer fatigue, which is often experienced in large scale disasters (Cohen, 2018; O'Donovan, 2019; Porter & Birdi, 2018; Salma, 2014; Simsa, 2019; Smith & Grove, 2017).

Significance

This study is significant because it provides insight into how collaboration occurs between voluntary organizations within Florida's emergency management system. This is important for two reasons. First, collaboration and coordination are crucial for effective disaster and emergency response. Understanding the extent to which voluntary organizations collaborate can produce positive social change because the findings from this study can be used to enhance future response capabilities, which, in turn, can save lives, protect property, and reduce suffering. Additionally, the implications for positive social change could be both significant and far reaching because this study shed light on the nature of relationships between external factors, collaborative components, and their influence on collaborative outcomes.

Second, this study provided clarity as to how emergency managers can effectively use collaboration to streamline response efforts, leverage knowledge and resources, and facilitate faster recovery from disasters. Such information will be useful for both state and county emergency management personnel as they both plan for and respond to future emergencies and/or disasters. The potential for positive social change associated with this study is discussed in greater detail in Chapter 5.

Summary

Collaboration is vital to Florida's response and relief efforts to disasters affecting the state. Florida's voluntary ESF-15 organizations are integral to these efforts because they provide humanitarian relief to Floridians impacted by wildfires, flooding, tornadoes, tropical storms, and hurricanes that occur throughout each year. It was essential to understand how voluntary organizations accomplished their mission by collaborating during response and relief efforts. I conducted this qualitative case study to better understand the internal processes involved in ESF-15 voluntary collaboration and their subsequent impact on delivering humanitarian assistance.

In Chapter 2, I examine the literature detailing this study's theoretical framework and studies associated with voluntary organization collaboration in emergency management. Given the paucity of literature regarding collaboration in this field, I also reviewed studies concerning emergency management, voluntary organization, interagency, and private-sector collaboration.

Chapter 2: Literature Review

The purpose of this qualitative case study was to gain a better understanding of how Florida ESF-15 voluntary organizations collaborated during response and recovery efforts to disasters affecting Florida. A significant portion of the literature regarding emergency management collaboration has focused on policy and procedures, system design, leadership, and collaborative outcomes (Chang, 2018). Moreover, few studies have examined the how internal processes of collaboration function during disaster response and recovery efforts.

The problem under study was that little is known about the internal processes of collaboration, how they affect collaboration between organizations during disaster responses, issues that impede collaborative efforts, and how organizations adapt to overcome challenges posed by an ever-changing set of circumstances (see Emerson et al., 2012; Sledge & Hammer, 2019; Wu & Chang, 2019).

This chapter contains a review of the literature associated with the major themes of this study. I begin the chapter by focusing on studies directly related to emergency management collaboration before discussing literature on collaboration in general. This approach was adopted for two reasons: (a) There were relatively few studies on emergency management collaboration, so the inclusion of other studies helped identify potential gaps in emergency management literature, and (b) similarly, the findings on collaboration could potentially apply to emergency management practices.

The literature review is divided into five major sections. In the first section, I explore the (a) background; (b) central tenets; (c) applicability; and (d) past usage of the

IFCG, which constituted the theoretical basis for this study. In this section, a clear description of the IFCG, how it has been used in previous studies of collaboration, and why it was best suited to this study is provided. In the second section, I discuss the literature associated with collaboration, beginning with articles directly related to voluntary organization collaboration in emergency management and building out to include: (a) literature regarding emergency management collaboration, (b) voluntary collaboration in fields unrelated to emergency management, (c) interagency collaboration, and (d) private-sector collaboration. The second section also includes a subsection that includes an exploration of universal themes associated with collaboration and a delineation of the limits of collaborative efforts. In this section, I provide a more comprehensive review of the literature associated with collaboration, establish whether commonalities exist between emergency management collaboration and collaboration in other fields, and extract common themes and establish the limits of collaboration. In the third section, the role of ESFs in emergency management is addressed. This section is vital because collaboration in Florida's ESF-15 function was the focus of the research project, and a clear understanding of the roles played by ESFs added vital context to the study. In the fourth section, I review how voluntary organizations fit into the overall structure of emergency management. This was necessary because voluntary organizations both constitute a vital link in the provision of critical resources and often augment governmental efforts to provide search and rescue, animal control, medical services, and other forms of relief. I conclude the chapter in the final section by synthesizing the

literature regarding collaboration, presenting a brief review of the history and findings of earlier works in addition to providing transitional material for Chapter 3.

Literature Search Strategy

The Walden University Library was the primary source of literature for this review. The databases searched through this library were SAGE Journals, SocINDEX, Political Science Complete, PsycINFO, Science Direct, Wiley Online Library, Oxford University Press, Public Administration Review, Emerald Insight, Taylor & Francis Journals Online, and ProQuest. Other databases used included the FEMA online library, Congressional Research Service, and Homeland Security Digital Library.

I used the following key search terms during the literature search: *collaboration, non-profit organizations, emergency management, volunteer organizations, collaborative governance, Florida, Emergency Support Functions, and Hurricanes Irma, Matthew, and Michael*. These terms were used both singularly, and in a compounded manner, to establish if relationships existed between them in the literature. While my search primarily focused on scholarly articles published within the last 5 years, the scope was incrementally expanded to 15 years to include literature central to understanding the evolution of research associated with collaboration.

I organized the articles found during the literature search into seven specific categories: (a) collaboration theory, (b) collaboration defined, (c) nonprofit collaboration, (d) emergency management collaboration, (e) private-sector collaboration, (f) limits of collaboration, and (g) emergency support functions. This organizational process aided in both the analysis and synthesis of the literature.

IFCG

Background and Tenets of the IFCG

The theoretical framework for this study was the IFCG proposed by Emerson et al. (2012). This framework built on previous works (e.g., Ansell & Gash, 2008; Crosby et al., 2006; Thompson & Perry, 2006) that took into account all factors involved in the collaborative process. This holistic view departed from earlier frameworks that had studied cross-sectional collaboration from an organizational or systems theory perspective (Crosby et al., 2015).

Crosby et al. (2006) proposed that there were two views of collaboration: (a) organizations “fail” into collaboration upon realizing that their efforts alone are insufficient and (b) collaboration was a “holy grail,” which represented the best solution to any problem. With these contrasting perspectives in mind, they asserted that collaboration was a complex series of interactions, affected by both external and internal influences that occurred midrange between perspectives. Crosby et al. developed this assertion based on an extensive review of literature associated with collaboration. Their research focused on the state of literature, associated with design and implementation of cross-sector collaboration, and was grounded in a diverse theoretical base that included organizational, public administration, leadership, and strategic management theory (Crosby et al., 2015). Their findings led to a series of 22 propositions that were used to develop a comprehensive framework for studying cross-sectional collaboration (Crosby et al., 2006). Unlike previous theories, this framework adopted an inclusive approach that considered the totality of factors (i.e., initial conditions, process, structure and

governance, contingencies and constraints, and outcomes) involved in the collaborative process (Simo & Bies, 2006). They concluded by suggesting future research should attempt to blend different perspectives and study collaboration in a holistic manner (Crosby et al., 2006).

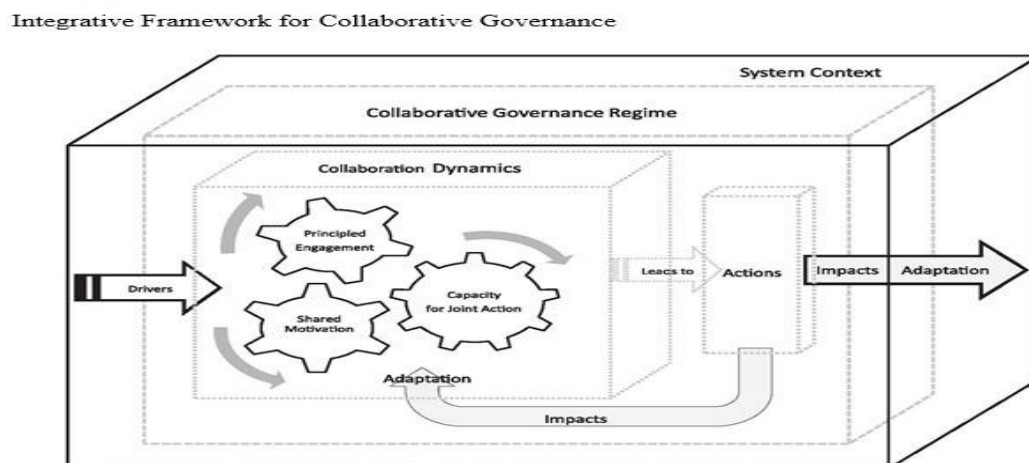
In a similar vein, Thompson and Perry (2006) argued that collaboration should be studied in a multidimensional manner considerate of both the antecedents and processes involved in collaboration. Like Crosby et al. (2006), the theoretical basis for Thompson and Perry's study was grounded in a diverse array of public administration, federalism, and organizational and strategic management theory; however, it involved a systematic review of literature outside the field of public administration. The central thesis of their research was twofold: (a) Research of literature outside the domain of public administration could elicit valuable insights into collaboration for public managers and (b) a clear understanding of what constituted collaboration was the key to managing collaborative efforts (Rice, 2018; Thompson & Perry, 2006). While Thompson and Perry (2006) found the tenets of their thesis sustained by the literature, they noted collaboration might be better understood and managed through a process-driven framework that took into account both antecedents and results of collaborative efforts. They further proposed that future research into collaboration focus on five specific processes in addition to antecedents and outcomes: (a) governance, (b) administration, (c) organizational autonomy, (d) mutuality, and (e) norms of trust/reciprocity. Their study is significant in that it established foundations from which the IFCG was constructed (Crosby et al., 2015; Emerson et al., 2012).

Ansell and Gash (2008) adopted a different approach in their meta-study of 137 theoretical and empirical articles associated with collaborative governance. Their use of theory was similar to that of Crosby et al. (2006) and Thompson and Perry (2006) because it included aspects of public management and organizational theories. A central goal of Ansell and Gash's study was to develop a general model of collaborative governance capable of identifying conditions necessary for successful collaboration. They then tested and refined the model by performing case studies of collaboration from empirical literature. They concluded that collaborative governance is a product of the system as a whole influenced, for better or worse, by variables associated with the process. Accordingly, each collaboration differs and is contingent upon both the context of the system and actors involved (Ansell & Gash, 2008; O'Leary & Vij, 2012).

Emerson et al. (2012) advanced these earlier frameworks by proposing an IFCG that was systemic and nested in a series of three dimensions: (a) system context, (b) collaborative governance regime (CGR), and (c) collaborative dynamics. An illustration of the IFCG is presented in Figure 1.

Figure 1

Depiction of IFCG Framework



Note. From “Integrative Framework for Collaborative Governance,” by K. Emerson, T. Nabatchi, & S. Balogh, 2012, *Journal of Public Administration Research and Theory*, 22(1), 1-29. Copyright 2011 Oxford University Press. Reprinted with permission.

The dimension of system context represents the totality of external factors surrounding collaborative efforts, including political, legal, organizational policies, levels of conflict and trust, and other dynamics affecting the overall architecture in which the collaboration operates (Emerson et al, 2012). The second dimension involves the CGR that encompasses decision making, resource allocation, planning, and overall guidance of organizations involved in the collaborative process (Shilbury, 2016). The collaborative dynamic dimension houses three interactive components: principled engagement, shared motivation, and capacity for joint action essential to the process of collaboration (Berends & Chalmers, 2015; Emerson et al., 2012).

According to Emerson et al. (2012) collaboration results when components of the collaborative dynamic dimension either adapt or respond to external drivers from the system context dimension. The resulting outcomes either generate collaborative results or

systemic adaptations as required (Emerson et al., 2012; Hayter & Nisar, 2018). The process of collaboration is neither formulaic nor linear and often involves a series of iterations, misguided efforts, and corrective actions before reaching full potential (Ansell & Gash, 2008; Emerson et al., 2012; Thompson & Perry, 2006). As such, collaboration hinges on iterative growth, development, and adaptation of components within the collaborative dynamic dimension to an ever-changing series of external drivers (Emerson et al., 2012).

Each of the components housed in the collaborative dynamic dimension is comprised of a series of elements essential to their continuous development. Elements associated with the first component of principled engagement include: (a) discovery of interests and values; (b) definition of purposes and objectives; (c) deliberation of issues, roles, and expectations; and (d) determination as to how to arrive at decisions and solutions (Berends et al., 2016). Shared motivation builds upon the iterative process initiated by principled engagement and requires: (a) mutual trust fostered through joint efforts, problem solving, and personal interaction; (b) understanding the perspectives of personnel associated with other organizations; (c) legitimacy built on the understanding of the reliability and capabilities of organizations and their representatives; and (d) commitment to collective action of the group as a whole by crossing organizational boundaries (Emerson et al., 2012; Shilbury et al., 2016). A capacity for joint action is the result of collaborative processes fostered by the components of principled engagement and shared motivation. As such, both the organizations and personnel involved are now capable of performing collective actions. This is made possible by the development of (a)

procedural and institutional arrangements designed to manage the activities of the group, (b) the determination of leadership responsibilities in various aspects of the group, (c) knowledge both shared and developed as a means of addressing problems, and (d) the utilization and sharing of resources between organizations (Beran et al., 2016; Emerson et al., 2012).

Applicability of the IFCG to This Study

Given the challenges of studying collaboration between non-profit and volunteer organizations within the confines of a specific ESF (i.e., ESF-15) of Florida's disaster response architecture, it was essential that I used a theoretical framework adaptable to the scope, size, and dynamics of the system used to respond to complex incidents involving multiple organizations (see Shilbury et al., 2016). The IFCG framework was best suited to the parameters of this study because it was adapted to fit the nuances of a qualitative case study involving a small number of nonprofit entities that were located within a subset of a broader organization (Beran et al., 2016; Emerson et al., 2012; Hayter & Azir, 2018; Shilbury et al., 2016). While the IFCG framework had not been applied to the study of nonprofit organizations in an emergency management or disaster relief context, it was used to study collaboration between nonprofit and nongovernmental entities in fields, such as substance abuse reform, border security, global health, and sports governance (Berends et al., 2015; Hayter & Azir, 2018). Therefore, it was reasonable to conclude that the IFCG would apply to the study of nonprofit collaboration in emergency management.

Use of the IFCG Framework in Studies Unrelated to Emergency Management

In addition to emergency management, IFCG has been successfully used to study collaboration in other disciplines. In this section, I review these applications and explain how those findings could be applied to nonprofit collaboration in emergency management. Berends et al. (2015) used the IFCG in a study of collaboration associated with reform efforts in Western Australia's Alcohol and Drugs Sector. They used a qualitative case study methodology consisting of document reviews and semistructured interviews of 20 government, sector, and consumer representatives. Stakeholders involved in the study reported high degrees of collaboration in each component dynamic and, as a result of the study, decided to include two of the CGRs in their 5-year organizational plan.

Berends et al. (2015) noted that the nature of the study did not allow for an analysis of both outputs and outcomes. Accordingly, they suggested that future studies focus on these aspects in addition to analyzing any changes in the CGR. Berends et al. (2015) also noted that their study was limited by the closed end nature of the questions; which did not allow for follow up queries regarding elements of collaborative dynamic dimensions.

The work of Berends et al. (2015) was useful to this study as the Western Australia Alcohol and Other Drugs Sector is a highly specified subset of the Australian Government concerned with addressing substance abuse in Western Australia. The Sector employs both paid and volunteer staff who often collaborate on many initiatives (Western Australian Network of Alcohol and other Drugs Agency, 2019). As the organizational

design is somewhat similar to ESF-15, the approach and methodology adopted by Berends et al. (2015) provided insight into how to approach this study.

Emerson & Nabatchi (2015) extended their earlier research by establishing a performance matrix for measuring collaborative governance in the IFCG. Their study used a qualitative case study to examine collaboration, between the Border Patrol and Forest Service, in the Coronado National Forest. The study involved 50 interviews of Federal Law Enforcement personnel, land managers, ranchers, environmental and wilderness advocates, and border researchers.

As a result of their study, Emerson and Nabatchi (2015) found a performance matrix useful with regards to measuring both the outcomes and performance of collaborative regimes housed in the IFCG. They further posited that future research should focus on using performance-based metrics, based on logic models, as a means of studying and improving collaboration.

Two considerations limit the performance matrix proposed by Emerson and Nabatchi (2015): (a) given the diverse nature of both organizational design and the dynamics involved, each matrix will need to be tailor-made to fit the parameters of each collaboration; (b) as their matrix design was conceptual, further empirical research must be conducted in order to establish the relevance of such a construct to future collaborative research efforts.

Beran et al. (2016) adopted the IFCG in a qualitative case study of global health projects supervised by the University of Geneva's Division of Tropical and Humanitarian Medicine. The project aimed to gain a broader understanding of international health

projects by applying the concept of collaborative governance to both organizations and the collective group as a whole.

In order to accomplish this, division personnel reviewed health projects in 11 countries located in Asia, Africa, and Latin America, applying the IFCG as a means of evaluating collaborative efforts Beran et al. (2016).

Beran et al. (2016) found the IFCG model useful as it allowed for the management of complex interactions and cultural differences found in international collaborations. They also noted that the model helped bridge divides between organizations with various resource capacities and diverse cultural backgrounds. Additionally, Beran et al. noted that interpersonal relationships which they term as “friendship” was central to the development of each component of the CGR. While this study was conducted in an international context it was useful to the research project as the ESF-15 function involves complex interactions, resource sharing, and organizational differences.

Shilbury et al. (2016) adopted the IFCG in a study of sports governance. The purpose of their research was to establish whether the IFCG framework was suitable for the management of Australia’s sports governance regime. As the study was theoretical, Shilbury et al. applied the framework to a review of relevant public administration literature and National Sport Organizations in Australia.

Shilbury et al. (2016) found that the IFCG could serve as a guiding framework for a future empirical study of sports governance in Australia. They follow this finding with suggestions as to specific themes and questions which warranted further research.

As the study was theoretical, and only explored the viability of the IFCG as a framework for future study, an obvious limitation was the necessity to validate findings through an empirical study. Given this limitation, the research of Shilbury et al. (2016) only partially applied to this study.

Hayter and Nisar (2018) applied the IFCG model to the study of limiting the spread of disease in developing countries. Their research involved a qualitative case study of collaboration between 16 nonprofit product development partnerships (PDPs) seeking to develop vaccines for diseases endemic to the tropics. Hayter and Nisar found that while the IFCG model explained many factors associated with collaboration between PDPs, it needed modification to fit the multiple contexts in which PDPs operated. Moreover, collaboration could occur despite a lack of shared motivation between all of the organizations. Accordingly, they suggested that future research explore whether the lack of shared motivation is limited to PDPs alone or representative of a broader dynamic.

The study was limited by several factors: (a) it was limited to a macro-level study of collaboration between medically oriented PDPs with established relationships, common terminologies, and similar methodologies; (b) the scope of the study only examined vaccine development within the context of developing countries; (c) the topic of public accountability was not addressed in the study (Hayter & Nisar, 2018). Despite these limitations, the research of Hayter and Nisar (2018) was use to this study as it used the IFCG model to study collaboration between nonprofit and volunteer organizations.

Although these studies employed IFCG theory to study collaboration in fields unrelated to emergency management, each found the theory useful as it provided a cogent, systemic, and realistic framework for understanding the collaborative process. Additionally, each of the studies found the IFCG adaptable to the scope, needs, and size of their research project.

Collaboration

Voluntary Organization Collaboration in Emergency Management

For the purpose of this study, collaboration is defined as different organizations working together or “co-laboring” to achieve a common purpose, goal, or outcome (Thomson & Perry, 2006; Ansell & Gash, 2008; Emerson et al., 2012).

While the literature search did not identify studies of voluntary collaboration in the context of emergency management associated with Florida; there were studies from other areas of the United States and across the globe, which shed light on the subject. This section reviews those studies and reveals insights regarding voluntary organization collaboration in emergency management.

Kapucu (2007) studied collaboration between public and voluntary organizations during the September 11, 2001 attacks on New York City using triangulated data derived from archival data and interviews with of personnel associated with numerous public and volunteer organizations. Kapucu drew upon theories of network and social capital theories in order to develop a framework from which to examine the development of relationships between public and volunteer organizations.

The study found that while the 1,600 volunteer organizations responding to the 9/11 attacks were able to effectively provide humanitarian services despite adverse circumstances, the lack of an overarching disaster response framework for the New York City area complicated relief efforts. Additionally, they suggested that voluntary response efforts are best coordinated through an existing framework (Kapucu, 2007).

The work of Kapucu (2007) is limited in that it involved a catastrophic incident in a highly developed part of the United States, imbued with ample resources, trained emergency management personnel, and a vast network of voluntary organizations. Moreover, the subsequent restructuring(s) of both the national, state, and local emergency response frameworks addressed many of the concerns noted in his study (Kapucu, 2007). Although Kapucu's work is now somewhat dated, insights provided about the need for both a highly developed framework and voluntary personnel that understand their roles are important to this study.

Simo and Bies (2007) viewed voluntary collaboration from a different perspective in a study, which examined the response to Hurricanes Katrina and Rita in southern Louisiana and southwest Texas. Their study used the model proposed by Bryson et al. (2006) to conduct a mixed-methods examination of cross-sectional collaboration between voluntary organizations, during hurricane relief efforts.

They found that voluntary collaboration was a vital component of the response efforts to Hurricanes Katrina and Rita on both Louisiana and Texas. Moreover, the 443 voluntary personnel interviewed indicated that such collaboration was both stimulated by and able to compensate for deficiencies in response efforts.

Subsequently, Simo and Bies (2007) posited that future research focuses on restraints to collaborative capacity, including deficiencies in resources and planning. While the study precedes the establishment of the National Response Framework, it will prove vital to the study of voluntary organization collaboration in Florida, as it used an established framework to explore the topic in similar circumstances.

Eller et al. (2015) arrived at less specific conclusions in a broad study of the core challenges, operational capabilities, and organizational relationships affecting voluntary organizations during their response to Superstorm Sandy. Their quantitative study employed the framework provided by Crosby et al. (2006) and used data derived from a survey of voluntary organizations attending an after-action incident review hosted by the National Volunteer Organizations in Disasters (NVOAD).

In their findings, Eller et al. (2015) noted that although voluntary organizations exhibited collaborative capacity when facing the challenges wrought by Superstorm Sandy; the manner through which collaboration occurred was nuanced and not easily defined. Additionally, they caveat that the study is limited by a population size ($n = 74$) which may be deemed inadequate to the study of thousands of voluntary organizations across a 24 state area. Despite this limitation, the study's findings were useful as it highlighted difficulties facing researchers when studying collaborative processes.

Moshtari and Goncales (2016) proposed that organizational factors are essential to effective collaboration between voluntary organizations. They do so in a systematic review of literature derived from 28 different academic studies.

The conceptual framework used in the study draws from organizational theory and concludes that a “cluster” of contextual, interorganizational, and inner-organizational factors constitute a more comprehensive means of studying voluntary cross-sectional collaborations. The study suggests that future research should examine both the contextual and organizational factors of their proposed framework by conducting empirical studies of voluntary organizations involved in emergency response efforts.

They also note that their study is limited by the nonempirical, literature review methodology associated with the research. Despite these limitations, the insights into the importance of considering organizational and contextual factor when studying collaboration were of use to this study.

Kapucu et al. (2017) built upon the work of Kapucu (2007) regarding the response of voluntary organizations to the September 11, 2001, terrorist attacks in New York City. Their study examined how the establishment of a framework for coordinating voluntary disaster relief efforts, through the NVOAD had affected collaboration between voluntary organizations.

The study was quantitative and used social network theory as a means through which to examine changes in interactions between voluntary organizations’ responses to the 9/11 attacks and Hurricane Katrina. The study indicated that voluntary organizations with a higher degree of involvement or “centrality” reported a greater degree of interactions with other organizations as a result of NVOAD involvement, while organizations with lesser degrees of involvement experienced diminished capacities in their response capabilities.

Their study also suggested that future research analyze NVOAD organizations in order to establish how networks are both formed and function during disaster response efforts (Kapucu et al. 2017). Both the findings and suggestions for future research originating from this study were useful as key voluntary organizations in the Florida ESF-15 are members of the state VOAD (Florida VOAD, 2019).

Wu and Chang (2018) examined collaborative mechanisms employed by Taiwan's voluntary organizations during responses to the Wenchuan Earthquake and Typhoon Morakot. Their research was qualitative and used collaborative governance theory as a means of ascertaining how voluntary organizations effectively collaborated when responding to the myriad of challenges prompted by these disasters. They employed semi-structured interviews of voluntary managers and distributed 155 questionnaires to members of the Flood Service Alliance.

The study found that successful collaboration developed through several factors, including established network connections, resource sharing, and mutual trust. Moreover, participants indicated the need for permanent disaster alliances or frameworks as a means of preparing for future crisis. This conclusion mirrors findings from earlier studies, based in the United States, regarding the necessity of existing frameworks through which collaboration may be better facilitated and encouraged (Kapucu et al., 2017; Wu & Chang, 2018).

Wu and Chang (2018) suggested that the study is limited by the need to explore causality between contextual factors and collaboration itself further. Accordingly, they suggested future research examine both the impact of organizational and institutional

factors on collaboration, in addition to how established frameworks may serve as indicators of future collaborative success (Wu & Chang, 2018). This work reinforces the earlier work of Kapucu et al. (2017) with regards to the notion that established frameworks, such as VOAD, serve as a useful means of fostering collaboration. As such, the research proved useful to this study.

Sledge and Hammer (2019) arrived at conclusions similar to Kapucu et al. (2017) and Wu and Chang (2018) in a study of voluntary agencies' response efforts to a variety of natural disasters across the United States. Their mixed-methods study was framed in the context of collaborative capacity theory and employed a methodology consisting of 115 surveys and 57 telephone interviews of voluntary and governmental agency personnel. Secondary data of the financial resources of voluntary organizations were also compiled and analyzed using quantitative analysis.

Sledge and Hammer (2019) found that voluntary organizations are both capable of swift responses to disaster situations and are often capable of compensating for deficiencies in governmental responses. Despite these findings, they note that voluntary agencies in certain areas faced difficulties when collaborating both with each other and governmental entities, which they attribute to a combination of inadequate resources and immature VOAD frameworks. They further propose that collaborations could be better facilitated by enhanced funding for less developed VOADs. As this research advances notions propounded in the earlier works of both Kapucu et al. (2017) and Wu and Chang (2018), it was useful to this study.

Each of these studies provides critical glimpses into the nature of collaboration between voluntary and non-profit organizations during emergency management responses. Taken in turn, these are: (a) the need for an overarching framework in order to establish structure, coordinate resources, and manage response efforts; (b) the vital role of networks as a means of facilitating communication and coordination between organizations; (c) the importance of relationships between personnel as a means of solving problems and addressing issues.

Collaboration in the Field of Emergency Management

Emergency management depends on collaboration between each of the organizations involved in response efforts. As such, effective collaboration between public, private, and voluntary organizations is vital to effective emergency management responses (Choi & Bower, 2006). This section reviews studies of emergency management collaboration and provides insights as to common themes found in the literature.

Norris-Tirrell and Clay (2014) found that disaster response capabilities are enhanced through collaborative planning in a qualitative case study of Tennessee's District 11 Homeland Security strategic planning process. Their study was based on a collaborative capacity framework and involved assessing the process of developing an emergency response plan for the Memphis metropolitan area.

As a result of their findings, they proposed a multi-level interlocking model which incorporates strategic planning as a means of fostering collaboration between organizations in the Memphis area.

They also noted that while their study was limited to a specific geographical area, the model could apply to other emergency management constructs (Norris-Tirrell & Clay, 2014). As their view regarding the utility of the strategic planning process, is shared by others (e.g. Kapucu et al., 2010; Nolte & Boenigk, 2013; Chang, 2018), this research was of use to the study.

Curnin (2018) approached the study of collaboration from a different perspective. This study of emergency management collaboration focused on public-private collaboration between the utility and public sectors during Australian bush fires. The qualitative study was rooted within the context of social cognitive theory and relied upon interviews of 16 utility-sector employees from three Australian states.

Through information gathered during the study, Curnin (2018) found that a lack of legitimacy and trust often inhibited collaboration between the private and public sectors. The study suggested that further research on public-private sector emergency management collaboration explore the nature of relationships with other private entities involved in the emergency management process.

The study is limited by the specific nature of its geographical context as the focus centered on three southern Australian state governments. Despite this limitation, findings regarding a need for trust and inclusion by other members involved in the collaborative process were insightful to this study.

Prentice et al. (2019) conducted a quantitative study of collaborative methods or “tools” employed by North Carolina counties. The grounded theory study explored how county managers collaborated with other public and nonprofit organizations during

various situations. Prentice et al. used data derived from a survey of 84 North Carolina county management personnel, to develop an understanding of which tools were most important to collaboration in the state.

The study's findings indicated that North Carolina county managers reported using collaborative structure, shared governance arrangements, and commitment to collaboration during efforts with other governmental and non-profit entities. Additionally, each collaboration appeared to be situationally structured and suited to the issues at hand (Prentice et al., 2019).

As a result of these findings, Prentice et al. (2019) suggested that researchers focus on situational context, and factors prompting collaborative decisions rather than constructing complex instruments to gauge their efficacy. The research of Prentice et al. was useful to this study as it approached the study of collaboration in a practical and realistic manner.

Chang (2018) offered numerous insights into collaboration in a study of Florida county manager's perceptions of cross-sectional emergency management. The study used a qualitative methodology and was grounded in theories of organizational and emergency management. A total of 15 county managers representing large, rural, and coastal Florida counties were interviewed regarding how and why county their governments collaborated with private sector and voluntary organizations during emergency management operations. The study found that county managers preferred a horizontal collaborative process as this facilitated the establishments of relationships and mutual trust necessary for effective collaboration (Chang, 2018).

Woong (2019) arrived at a different conclusion than Chang (2018) in a study of collaboration between members of disaster and emergency management communities, in South Korea. The study was quantitative and used the framework of collaborative capacity as a theoretical underpinning. The study employed a survey to elicit responses from 318 national and local government personnel who worked in disaster and emergency management. Hypothesis associated with the study aimed to understand which type of collaboration (i.e. vertical or horizontal) were most effective for facilitating emergency management collaboration in South Korea

The study indicated that vertical collaboration was considered to be the most effective means of fostering collaboration. The study concluded that this was to be expected, given the centralized nature of South Korean governance, and further noted that collaboration in the United States differs; given both the federal construct and subsequent delegation of home rule powers, to counties and cities by respective state governments (Woong, 2019).

Barthe-Delanoë et al. (2018) proposed that effective collaboration depends on the adaptive capacities of organizations responding to crises situations. They arrive at this finding in proof of concept case study of the nuclear power plant disaster in Japan.

The study was grounded in crisis management theory and employed an algorithmic computer-based model designed to enhance collaborative management efforts. The model was employed, during a simulation of the 2011 Fukushima Daiichi crises, in order to establish the degree to which technology could yield better collaborative workflows and efficient application of resources. Barthe-Delanoë et al.

(2018) found that the model was effective in providing a comprehensive overview of the situational context, collaborative workflows, and resource requirements associated with simulated response efforts. As such, they noted that collaboration might be enhanced by providing managers with a comprehensive understanding of deficiencies and weakness associated with the response.

While the proof in concept application of their model was effective in this particular case study, they suggested that the platform needs further empirical tests to establish feasibility in other situations (Barthe-Delanoë et al., 2018). Although experimental, this study was insightful as it highlighted the feasibility of technology as a means of gaining a better understanding of situational factors affecting collaborative efforts.

The review of the literature associated with emergency management collaboration revealed several recurring themes. Namely: (a) the importance of planning, preparation, and established protocols as a means of facilitating effective collaboration in crises; (b) mutual trust, information sharing, and a preexisting commitment to collaboration are essential to response efforts; (c) each collaboration is different and hinges upon situational context; (d) an ability to adapt to the ever-changing realities of situations is an essential aspect of developing collaborative capacity; and, (e) a vast majority of emergency management response efforts are localized events (i.e., wildfires, tornadoes, flooding) requiring smaller-scale collaborative efforts.

Voluntary Organization Collaboration in Fields Unrelated to Emergency

Management

Collaboration is also vital to the efforts of voluntary organizations associated with other fields of endeavor including health sciences, sociology, psychology, and education (Gazely & Guo 2015). This section examines voluntary collaboration in other fields and reveals similarities between collaboration in other fields and emergency management.

Henttonen et al. (2014) argued that clearly defined roles, mutual trust, and information sharing were essential aspects of the collaborative process. They arrived at this finding in a comparative case study of six non-profit organizations affiliated with academic research. The study was grounded in exchange and resource dependency theory and involved seven interviews of personnel from private, governmental, and academic research organizations (Henttonen et al., 2014).

In their findings, Henttonen et al. (2014) indicated that both the above-listed factors and organizational framework are essential to effective collaboration. This is similar to findings in the literature associated with voluntary organization collaboration in emergency management (Kapucu, 2007; Simo & Bies, 2007; Wu & Chang, 2018; Sledge & Hammer, 2019).

Henttonen et al. (2014) noted that the study was limited by the multi-national nature of the study. Accordingly, they suggest that this work serve as a starting point for studying local collaborative efforts. While their research stems from another field of study, the work of Henttonen et al. was useful to this project as it reinforced findings on collaboration from the emergency management perspective.

Jang et al. (2016) examined the motivations for self-organized voluntary collaboration when providing social services to clients. Their quantitative study extended the institutional collective action framework and used empirical data derived from 1,512 surveys of nonprofit organizations representing eight major metropolitan areas of the United States.

As a result of this study, Jang et al. (2016) proposed that self-organized collaboration is prompted by the internal conditions, embedded relationships, service area, and organizational capacity of each organization involved in the collaboration. This finding reflects similar notions postulated by Moshtari and Goncales' (2016) theoretical work associated with emergency management collaboration and, as such, was worthy of note.

Costa (2017) studied the impact of collaboration on income distribution and development Brazil. The study used survey data gathered from 5,562 Brazilian municipalities and was framed in the context of collaborative governance theory. Costa found that while the distribution of federal resources, through contractual relationships with non-profit organizations known as *convenios*, had positive impacts on income distribution; there was little to suggest that human developmental conditions improved as a result of resource distribution.

Based on these results, Costa (2017) suggested that collaboration may not always result in positive outcomes for improving income disparity. In keeping with this finding, Costa suggested that future research explore this phenomenon on a regional scale in order to further substantiate the study. As this research project arrived at a significantly

different finding than anticipated, it proved advantageous to employ the findings in this study.

In a similar vein, Cheng (2019) explored the role of voluntary organizations involved in collaborative efforts to deliver services in public parks. The study was grounded in co governance theory and proposes a new framework for the involvement of nonprofit organizations in planning, implementing, and governing public parks. Cheng conducted 204 surveys of nonprofit organizations affiliated with various parks across the United States in order to develop the new framework.

As a result of this study, Cheng (2019) found that the capacity of collaboration increases as a result of the involvement of non-profit organizations in strategic planning, power-sharing, and joint decision making. Cheng does note however, that the findings are limited and will need to be explored in future empirical studies as the motivations, potential consequences, and results of involvement of non-profit organizations on park governance are yet unknown. Despite these limitations, the study's insights into building collaborative capacity through involvement in strategic planning, power-sharing, and joint decision making was of use to this project.

Getha-Taylor et al. (2019) argued that while trust is an asset, collaboration can occur without it being present. The grounded theory study reviewed literature from the legal, conflict-resolution, and psychological fields in order to establish an assertion that: A deficiency of trust does not necessarily imply a lack of collaboration. They further concluded that rules, policies, established norms, and decision-making procedures can substitute for trust.

The findings suggest that future research involving trust and collaboration examine the role of power, effect of mandates and sanctions, and perception of fairness as an alternative to trust in collaboration (Getha-Taylor et al., 2019). This study was useful as it provided a different perspective regarding the use of mandates, in place of trust, to ensure collaboration occurs.

These studies reveal several similarities between nonprofit collaboration in emergency management and other fields. Specifically: (a) a clear definition of roles, mutual trust, and involvement in the planning process is essential to the collaborative process; (b) collaboration is enhanced through existing relationships, organizational capacity, and a willingness to share both information and power; and, (c) collaboration is often iterative and requires organizational flexibility and adaptive capacity in order to ensure success.

Interagency Collaboration

Collaboration often involves public-safety concerns that are limited to police, fire/ems, and other public safety agencies. In these situations crossing organizational boundaries can prove to be both problematic and challenging. In order to address this, agencies must adopt innovative approaches to dynamic and challenging situations (Ward et al., 2018)). This section reviews studies of how organizations collaborate across organizational lines in diverse situations.

Ward et al. (2018) proposed a framework for interagency collaboration in a study of the FEMA Corps. Their research was grounded in the institutional analysis and development framework and used qualitative case study methods as a means of eliciting

information. Information was gathered through interviews of 12 FEMA Corps and Corporation for National and Community Service managers.

The study found that interagency partnerships could be enhanced through the establishment of a formal institutional collaborative framework. In keeping with this finding, they suggested that formal arrangements be established through interagency agreements and memorandums of understanding (Ward et al., 2018).

Ward et al. (2018) noted that the study was limited as it focused on collaborative efforts in the national service component of the federal government. This study was insightful as it reinforced the need for existing frameworks as a means of facilitating collaboration.

Bistaraki et al. (2019) postulated that strong leadership is a vital component of interagency collaboration. Their qualitative case study examined cross-sectional collaboration between police, fire brigade, ambulance service, and the public health sector during the 2012 Olympic Games in London. Their study used interagency collaborative theory framework as the guiding theoretical construct for the project. Data were gathered through a combination of semi-structured interviews of 26 security and public health personnel, direct observations, and document analysis.

The central finding of the study is that leadership played a paramount role in interagency collaboration during the London Olympic Games. When particular challenges arose regarding public health sector leadership and coordinating collaborative decision making, these were overcome by the development of relationships and information sharing between agencies (Bistaraki et al., 2019).

Bistaraki et al. (2019) noted that the study had limits given the unique setting of the London Olympic Games. They suggested that future research focus on other significant events, such as the World Cup, in order to establish the efficacy of their findings. Despite this limitation, it was of use to this research project as it yielded insights into both the importance of strong leadership and how organizational conflicts were solved.

These studies provided three insights as to how organizations collaborate across organizational lines in stressful and time-restricted scenarios requiring immediate action. Namely: (a) reality-based training provides a means of fostering innovative solutions as it encourages crossing established boundaries to address an immediate situation; (b) frameworks and pre-existing arrangements are useful for breaching organizational lines; (c) strong and decisive leadership is essential to effective collaboration in a crisis. As the ESF-15 function is often faced with similar situations, this research was useful to this study.

Collaboration Between Private Sector Organizations

Collaboration is also critical in addressing issues affecting issues in private-sector fields such as business, health science, and management. Often private-sector organizations use collaborative methods as a means of solving problems and addressing issues (Zhelyazkof, 2019). This section examines how collaboration occurs in the private-sector and yields clarity into similarities between private and public sector collaboration.

Audet and Roy (2016) argued that strategic communities (SCs) serve as an essential vehicle for fostering collaboration between health-care organizations in Quebec,

Canada. Their action-research project used an interorganizational collaborative construct as the theoretical basis for the study. Data were collected through a variety of sources which included 186 interviews, 746 hours of observation, forums, and archival review of documents.

The study found the strategic committee concept useful to collaborative health-care efforts in the Province of Quebec. Moreover, they noted that SCs were able to alleviate deficiencies in inter-organizational situations, where levels of care had declined. As such, they propose that the SC concept can have a positive effect on collaboration involving different health care organizations. The work of Audet and Roy (2006) was of use to this study as the ESF-15 is considered to be a strategic community of sorts.

Bstieler et al. (2017) argued that collaboration depends on the development of mutual trust between organizations. The degree of trust deepens over time as reciprocal relationships develop and, decision-making processes improve (Bstieler et al., 2017). They arrive at this finding through a study of university-industry (UI) collaboration in South Korea. The study adopted an actor-partner independence model and employed a quantitative analysis of 98 pairs of university industry dyadic research partnerships.

Bstieler et al. (2017) found that universities tended to be less trusting as they preferred asymmetric collaborative approaches as opposed to their business partners who preferred linear models. The study is limited as it derived findings from a survey of Asian UI research collaborations and may be less applicable in Western countries (Bstieler et al., 2017). Despite these limitations, this study reinforced earlier findings regarding trust and inclusive decision making.

Zhelyazkof (2018) examined how trust, developed through established relationships with third party intermediaries, affected collaboration in venture capital partnerships. The research was framed in triadic closure theory and used correlative analysis to test hypotheses associated with the proclivity of venture capital firms, to invest in limited partnerships via intermediaries. Given the secretive nature of the investment industry, data was studied from an undetermined number of partnerships.

While the motivation of private-sector organizations differs from their public-sector partners, the literature reveals three similarities in their respective approaches to collaboration. Namely: (a) mutual trust, reciprocity, and inclusive decision making processes are integral to private-sector collaboration; (b) organizational differences are often solved through the development of relationships and personnel level communication; (c) organizations develop adaptive capacity and problem solving capacity through innovation.

Common Themes and Limits of Collaborative Efforts

Common Themes Found Throughout the Literature

Several recurring themes associated with collaboration may be found in the literature. This section reviews common themes associated with collaboration and describes how they relate to this study. Taken in turn, the themes are: (1) lack of consensus as to the precise nature of collaboration and how it should be measured; (2) collaboration is both complex in nature and influenced by external factors; and, (3) while external factors establish the direction of collaborative efforts; internal processes determine success.

Lack of Consensus as to the Nature of Collaboration and How it Should Be Measured

The first theme found in the literature is a lack of consensus regarding the precise definition of collaboration and how it should be measured. Robinson and Gaddis (2012) examined this characteristic in a study of Texas public schools responses to Hurricane Katrina. Their study was grounded in collaborative management theory and used a quantitative methodology to determine what constituted collaboration and if it could be measured. Survey instruments were sent to 1,041 Texas school districts and analyzed to determine the validity of hypotheses associated with the study.

Gazely and Guo (2015) expanded upon the work of Robinson and Gaddis (2012) in their study of prior research on collaboration. Their research efforts used a systematic review of empirical literature regarding non-profit organization collaboration in order to establish the (then) state of literature associated with the field. Gazely and Guo reviewed 354 relevant articles and coded the data into specific categories for analysis.

They found that while there was a rich and diverse volume of data on collaboration, most studies focused on the antecedents and results of collaboration. Accordingly, little was known as to the specific processes involved. The study suggested that future studies include failed collaborative efforts as this could lead to a more precise means of measuring collaboration (Gazely and Guo, 2015).

Collaboration is Both Complex in Nature and Influenced by External Factors

Another recurring theme is that collaboration is both complex and driven by external factors beyond the control of participants. As such, participants often develop

adaptive capacities through a combination of mutual trust, effective communication, and shared decision making (Martin et al., 2016; Rice, 2018).

Martin et al. (2016) proposed that interorganizational communication played a pivotal role during numerous collaborative responses to the 2010 earthquake in Haiti. Their grounded theory case study triangulated data from archival sources and eight structured interviews of senior government and NGO officials. They found that while large NGOs had preexisting collaborative capacity, due to previous working relationships, smaller entities often relied on inter-organizational communication as a means of addressing local problems.

They suggested that future research focus on lower-level aspects of collaboration such as communication and coordination, to better understand inter-organizational dynamics associated with disaster response efforts (Martin et al., 2016). This research was useful as it provided an essential perspective on the communicative aspect of collaboration.

Rice (2018) broached the subject of inter-organizational collaboration differently in an ethnographic case study of a county emergency response group. The study involved observations and subsequent interviews of eight personnel associated with an Emergency Events Management Group during meetings and response efforts.

The study found that group members defined collaboration differently based on the context in which the collaboration occurred. Before an incident, members highlighted the importance of relationships and developing mutually agreed-upon plans. Conversely,

the focus changed to how they collaborated when making decisions during and after emergencies.

The study does have limits; as it notes that group members were members of an action group focused on emergency response. As such, they had established a high degree of trust, communicative skills, and decision-making capabilities through working together in other crises (Rice, 2018). This research applied to the study, as ESF-15 members shared similar joint experiences when collaborating.

While External Factors Define Direction, Internal Processes Determine Success

Another theme of collaboration derived from the literature, is that that successful collaboration hinges upon internal process. Al-Tabbaa et al. (2019) advanced this proposition in a study of cross-sectional collaboration between 26 nonprofit organizations and the business sector. The explorative qualitative study approach used alliance management as the theoretical lens through which to examine the nature of nonprofit-business collaborations in the United Kingdom. They conducted interviews of 36 nonprofit-business sector personnel across the country in order to establish how collaboration occurred in the alliances (Al-Tabbaa et al., 2019).

The study indicated that organizations were able to develop new capabilities for both exploring new collaborative opportunities and managing existing ones. It further found collaboration developed in distinct stages (i.e., formation, operation, and institutionalization) as the collaborative process matured.

The study was limited in that it focused on business sector collaborative dynamics that may not be entirely applicable to the context of emergency management. As such,

the study suggested that future research focus on broader examinations involving different contexts (Al-Tabbaa et al., 2019). While the general context of the research limited broad applicability to this study, the notion that collaboration occurs in distinct stages as a result of process maturation was worthy of note.

These articles yielded vital perspectives into the present understanding of collaboration. These are: (a) though the definition of collaboration is commonly understood, there remains much to learn about the processes involved; (b) collaboration is driven by a combination of internal and external factors and appears to mature over time; and, (c) while external factors define the direction of collaborative efforts; internal processes determine success. These perspectives were critical to the study as they showed where the current gap in the body of literature existed and what warranted examination.

Factors That Limit Collaborative Efforts

A variety of factors sometimes limit collaborative efforts: (a) outdated response frameworks; (b) cultural and organizational barriers; (c) volunteer fatigue; and (d) inadequate government policy are often cited as reasons for collaborative failures. This section explores both the limits of collaborative efforts and the nature of collaborative failure

Volunteer Fatigue and Exhaustion

Smith and Grove (2017) postulated that volunteer fatigue and exhaustion might hinder long-term recovery efforts. Their qualitative study used Herzberger's two factor theory as the foundation for exploring motivational factors affecting American Red Cross disaster response volunteers in a western state.

The research methodology associated with the study involved semi structured interviews of 16 experienced volunteers in various volunteer leadership roles with the American Red Cross. Smith and Grove (2017) described the volunteer's experiences as "bittersweet and paradoxical" in the sense that: While they derived satisfaction from helping others in disasters the combination of volunteer management practices and fatigue often led to dissatisfaction and frustration.

They caveated these findings by noting that the study was limited to American Red Cross volunteers in one state and, as such, may not apply to all volunteer organizations. Accordingly, they suggest that future studies examine the nature and impact of volunteer management in other settings (Smith & Grove, 2017). This study was of use to this project, given the voluntary nature of the ESF-15 function.

Simsa et al. (2019) mirrored the findings of Smith and Grove (2017) with regards to volunteer fatigue and exhaustion, in their study of volunteers during the 2015 European Refugee Crises. Their qualitative case study focused on volunteers working with European Community Service Organizations and was grounded in a blend of volunteer management and spontaneous volunteering theory.

A total of 57 volunteer personnel interviews were conducted, and data were reviewed in both a deductive and inductive manner. The study found that while volunteers filled an essential gap during the refugee crises, the lack of organization and systematic responses from many of the affected governments, led to volunteer fatigue. Accordingly, they suggest a framework for managing volunteer efforts in order to

preempt future deficiencies (Simsa et al., 2019). This study was useful as it reinforced earlier findings regarding volunteer management.

A Combination of Deficiencies

Porter and Birdi (2018) argued that while there is little agreement in academic literature, as to why collaborative efforts fail; there exists a common understanding that each collaboration differs from another and is, as such, subject to the context in which the collaboration exists. They arrived at this finding in an international literature review of empirical articles associated with water policy innovation. Porter and Birdi found that there were 22 reasons given for various collaborative failures in water policy innovation.

Of the 22 different reasons cited for collaborative failure, the study proposed that collaborative failure most often occurs due to a combination of deficiencies. Namely: (a) failure to communicate effectively; (b) lack of trust; (c) failure to accept different norms and values; (d) lack of both vision and purpose.

While the study was limited by both a focus on water policy innovation and the narrow scope of the methodology; it is worthy to note that the idea of aggregate failure, due to a combination of deficiencies, is reflected in earlier works of collaborative theorists (i.e., Ansell & Gash, 2008; Emerson et al., 2012). As such, these deficiencies may represent “higher-order” factors essential to collaboration (Porter & Birdi, 2018).

Inadequate or Outdated Governmental Policies

O’Donovan (2019) postulated that collaborative efforts involving governmental, nonprofit, and voluntary organizations are prone to failure based on the scale of the disaster. O’Donovan based this proposition on a case study of small, medium, and large

scale natural disasters in the United States. The study was grounded in Gronbjerg's (2006) theory of market/governmental failure and used a review of empirical literature associated with governmental, nonprofit, and volunteer organization's response efforts to propose a theory of simultaneous failure in disaster relief efforts (O'Donovan, 2019).

O'Donovan's (2019) theory hinged on three propositions. Namely: (a) low demand for public services will lead to partial failure in small scale disasters; (b) moderate demand for public services will lead to success in medium-scale disasters; (c) high demand for public services will cause simultaneous and partial failure during large scale disasters. O'Donovan noted that this theory was limited by a lack of specificity regarding how levels of demand and governmental nonprofit involvement are related and determined.

As such, O'Donovan (2019) suggested that future research work towards a clearer understanding of how governmental policy affects the cause and effectual relationship between the size of disaster relief efforts and their propensity to succeed. While this research was of some import, the theory needed further development in order to be have been directly applicable to this study.

These studies indicated that several barriers limit effective collaboration. Namely: (a) outdated or inadequate frameworks; (b) organizational barriers prohibiting effective communication and cooperation; (c) failure to properly manage human resources and ignoring the symptoms of fatigue; (d) lack of trust, failure to communicate, and a paucity of vision or purpose; and, (e) inadequate government policy.

Emergency Support Functions

Emergency Support Functions are the vehicle through which federal, state, and local governments both organize and coordinate their response efforts to natural disasters and other crises (Department of Homeland Security, National Response Framework, 2016). ESFs are organized by function and address specific concerns (e.g., transportation, utilities, law enforcement, and humanitarian needs) endemic to disaster relief efforts. As such, they serve as the vital link for both resource and service provision to affected communities (Choi & Brower, 2006; Kapucu, 2006). While the review of the literature failed to reveal specific articles regarding ESFs, two studies applied in a general context

Choi and Bower (2006) argued that ESFs were central to the emergency management capabilities of a large Florida county and, as such, needed effective coordination from the local emergency manager. Their quantitative study was framed in network analysis theory and used a Likert scale survey of 25 government and nonprofit agencies associated with the county's emergency management system.

The survey revealed that there was confusion among most (% 60) of those surveyed as to who the lead agencies were for various ESFs (Choi & Bower, 2006). Additionally, many respondents indicated that they were only vaguely familiar with the county's CEMP. As such, Choi and Bower (2006) suggested that emergency management organizations conduct table-top exercises to determine if similar deficiencies exist in other counties. (Choi & Brower, 2006). Their research was helpful to this study as it suggested the importance of each organization understanding both structure and roles before natural disasters.

Kapucu (2006) also found that clear leadership was essential to the management and coordination of ESFs during hurricane relief efforts. Kapucu arrived at this finding in a case study of the federal response to Hurricane Katrina in Louisiana. The study was framed in Ostrom's (1998) collective action and adaptation theory and employed archival review of various sources as the research methodology. Kapucu attributed much of the initial weakness and confusion of the response effort to inadequate planning, communication, and coordination at all levels of government. They noted that this was also the case with many ESFs as they lacked both direction and guidance from local, state, and federal governments (Kapucu, 2006).

Kapucu (2006) suggested that the (then existing) National Response Plan be modified to address the deficiencies noted in addition to more comprehensive planning and coordination at all levels of government.

While many of the issues Kapucu (2006) identified, have been addressed through a more comprehensive approach to planning, coordination, and implementation of disaster relief efforts, and a newer National Response Framework, the salient points of this article are twofold: (a) failures in emergency management are comprehensive and often involve deficiencies at many levels; and, (b) effective leadership can help mitigate deficiencies in planning and coordination (General Accounting Office, 2015).

These articles highlighted the importance of personnel within individual ESFs understanding how their particular function fits into the broader response architecture. Additionally, they emphasize the importance of understanding the CEMP, as it serves as the guiding document for emergency response efforts. Finally, the need for clear and

effective leadership throughout the response is underscored by the GAO report to Congress.

Voluntary and Nonprofit Organizations in Emergency Management

Voluntary and nonprofit organizations are integral to emergency management response efforts. Often, the effectiveness of these efforts hinge on relationships established, between voluntary and emergency management organizations, long before disasters occur. This section reviews studies of how those relationships develop and are maintained.

MacManus and Caruson (2011) conducted a qualitative study of emergency management networks involving volunteer, private sector, and governmental organizations in Florida. The study was based in systems theory and used survey methodology to gauge the effectiveness of emergency management networks throughout the state.

A total of 422 surveys of emergency management personnel from governmental, private sector, and volunteer organizations were examined. The study found that partnerships were stronger in rural counties and among private sector industries such as agriculture and nursing homes. Conversely, the study also found that large municipalities indicated that partnerships were weaker and less defined in urban areas. They suggest that future studies focus on further in-depth analysis of local emergency management to ascertain why this may be the case (MacManus & Caruson, 2011). While this study was worthy of note, it was not of use to this project.

Kim and Jung (2016) postulated that voluntary organizations are more likely to be involved with local emergency management based on their level of preparedness, training, and resources. They arrived at this finding through a quantitative study of county governments' experiences with voluntary organizations. The study was based on inter-organizational theory and employed surveys of 303 county governments across the United States.

The counties responses to surveys indicated that while preparedness was a necessary dimension, the most critical factors centered on the levels of training and resources available to volunteer organizations (Kim & Jung, 2016). Accordingly, they suggest that future research examine the degree to which these variables affect involvement in emergency management. This study was of use to the research project.

Rivera (2016) found that voluntary organizations are prone to work with emergency management organizations with established structures and a greater degree of organization. The quantitative study employed organizational theory and used a national survey of 268 U.S. counties in order to measure the propensity of volunteer organizations to work with emergency management entities based on structure.

The study found that most volunteer organizations prefer to work with larger, established, and more organized EM organizations, as opposed to individual fire or health departments. In keeping with this finding, Rivera (2016) suggested that future studies focus on what factors prompt this tendency and whether the same applies in other contexts. While the results of this research were intriguing, the need for further

exploration and explanation of the phenomenon observed made it less than an adequate fit for this study.

Quarshie and Leuschner (2019) explored how the ever-changing dynamics of natural disaster response efforts affected interactions between volunteer organizations. This grounded study drew from systems theory and employed interviews of 20 private, nonprofit, and public sector personnel affiliated with the 2011 response to Hurricane Sandy in New Jersey. Based on the results of the research, they proposed an inclusive model for understanding the nature of organizational change prompted by a catastrophic event.

The proposed model was based on findings that the emergency management system consisted of highly evolved interactions and relationships capable of adapting to rapidly changing scenarios and requirements. They conclude by noting that future studies could apply in other contexts including sustainability studies (Quarshie & Leuschner, 2019). This study was applicable to the research project as adaptability is a core tenet of Florida's ESF structure.

The literature indicates that voluntary organizations maintain relationships with emergency management organizations based on two factors: (a) the level of preparedness, training, and funding of the voluntary organization; (b) voluntary organizations are prone to work with established professional emergency management organizations.

Conclusion

Synthesis of the Literature

Given the importance of collaboration to emergency response efforts, it was essential to develop an understanding of the collaborative processes involved in such responses. While a large body of research exists regarding the drivers and outcomes of emergency management collaboration; little attention has been given to the internal processes of collaboration itself.

Moreover, the literature also suggested that while external drivers define the direction of collaborative efforts, success depends on the internal processes involved. Despite the lack of attention to the internal processes of collaboration, the literature revealed there is a great deal of agreement with regards to several aspects of collaboration. These are highlighted in what follows.

Common Areas of Agreement

The literature revealed several common areas of agreement between authors with regards to collaboration. Namely: (a) the multidimensional nature of collaboration and influence of external factors; (b) the importance of establishing mechanisms for measuring collaboration; (c) the elusive nature of collaboration; (d) the importance of frameworks to collaborative efforts; and, (e) similarities between collaboration in other fields and emergency management.

The Multidimensional Nature of Collaboration and Influence of External Factors

Early theorists noted that collaboration was multi-dimensional and often prone to the influence of external and internal factors (Thomson & Perry, 2006; Crosby et al.,

2006). Others, advanced these notions and found that collaboration was also systemic and better understood in the context of a framework which took into account all of the variables affecting the collaborative process (Ansell & Gash, 2008; Emerson et al. 2012).

The Importance of Establishing Mechanisms for Measuring Collaboration

The subsequent development of frameworks for studying collaboration led to an understanding that collaboration could be better understood if it could be measured (Berends and Chalmers, 2016). Accordingly, Emerson and Nabatchi (2015) developed a performance matrix for gauging the effectiveness of collaborative efforts based on outputs and outcomes. While this matrix was successfully employed in a study of collaboration on the U.S./Mexican Border, others noted that relationships and context were also integral to collaborative efforts (Beran et al., 2016).

The Elusive Nature of Collaboration

The literature also noted that a definition of collaboration remains elusive and subject to interpretation. As such, authors must either develop a unique definition or rely on earlier works to establish what it means to collaborate (Robinson, et al., 2006; Thomson & Perry, 2006; Crosby et al., 2006; Ansell & Gash, 2008).

The Importance of Frameworks to Collaborative Efforts

Frameworks are also critical to understanding collaborative efforts involving voluntary organization collaboration in emergency management (Kapucu, 2007; Simo & Bies, 2007). Towards this end, the NVOAD has positively impacted the ability of volunteer organizations response efforts to disasters and other crises, by providing a

means of developing relationships, information sharing, and coordinating with local VOADs (Kapucu et al., 2017).

Similarities Between Collaboration in Other Fields and Emergency Management

General emergency management collaboration hinges on a number of factors including strategic planning, similar terminologies, and mutual trust (Northstedt, 2016; Sparf and Petridou, 2017). Curnin (2018) postulated that trust and inclusion in the planning process were the most vital factors for effective collaboration. Conversely, Getha-Taylor et al. (2019) argued collaboration could occur without trust if an enforceable mandate to collaborate exists (Getha-Taylor et al. 2019).

Volunteer organizations collaborate by similar means in other fields. Hentonnenn et al. (2014) noted that clearly defined roles, trust, and information sharing were necessary for collaboration among academic researchers (Hentonnenn et al 2014). Jang, Feiock, & Saitgalina (2016) argued that voluntary organization collaboration depends on a combination of embedded relationships, organizational capacity, and the internal conditions of each organization involved. Cheng (2019) found that strategic planning, power-sharing, and joint decision-making were also critical to effective collaboration between nonprofit organizations involved in community efforts.

Interagency collaboration between public sector agencies depends upon effective leadership in order to cut across organizational boundaries. Bistaraki et al. (2019) found that strong leadership was crucial to collaboration between police, fire, and public safety organizations during the 2012 London Olympic Games (Bistaraki et al., 2019).

Collaboration in fields such as health care and business also involves many of the same factors as nonprofit and public sector collaboration. Audet and Roy (2006) found that the collaborative capacity of health care organizations was enhanced by breaching inter-organizational divides between health providers. Zhelyazkof (2018) established that trust was vital in determining whether business organizations would invest in limited partnerships. Taken as a whole, the overall review of collaborative literature seems to indicate the existence of commonalities in each field of collaboration.

Summary

As illustrated in the literature, collaboration is a complex, interconnected process involving external and internal factors. Accordingly, understanding the precise nature of collaboration and the interactions between people representing various organizations needed to collaborate is of paramount importance.

The purpose of this case study was to address the gap in literature regarding how internal collaborative processes both occur and affect collaboration. How this was accomplished is addressed in Chapter 3 which details the research design and rationale, role of the researcher, methodology and issues of trustworthiness.

Chapter 3: Research Method

The purpose of this qualitative case study was to develop a better understanding of how voluntary organizations collaborated and coordinated response efforts within the ESF-15 function of Florida's emergency management system. While a significant and growing body of research exists regarding cross-sectional collaboration in the emergency management field, little is understood about the internal processes vital to collaborative efforts (Al-Tabbaa et al., 2019). With this study, I aimed to address the gap in the literature by examining the internal processes of collaboration between voluntary organizations during a natural disaster.

In this chapter, I describe the study's research methodology by detailing participant selection, sample size, data collection, and data analysis. The chapter also includes a discussion of the reasons for selecting a qualitative approach, case study research tradition, role of the researcher, issues of trustworthiness, and ethical procedures.

Research Design and Rationale

Research Questions

The two research questions that guided this study were:

Research Question 1: To what extent did collaboration occur between voluntary organizations in response to Hurricanes Irma, Matthew and Michael?

Research Question 2: What role did the three components of the IFCG play in the response?

Justification of Approach to the Study

I selected the qualitative case study line of inquiry because this approach allowed the exploration of collaboration through the experiential lens of those involved in Florida's ESF-15 response efforts to Hurricanes Matthew, Irma, and Matthew. Accordingly, the qualitative case study methodology best suited this study's needs because participants provided their version of what happened by detailing their individual experiences, understandings, and perceptions of reality during the event (see Rudestam & Newton, 2007).

I adopted the IFCG proposed by Emerson et al. (2012) for this study as the framework from which to explore internal processes associated with collaboration in Florida's ESF-15 function. The IFCG best fulfilled the requirements of this study because it was adaptable to the size, scope, and particular nuances of the ESF-15 function. Moreover, because the IFCG places particular emphasis on internal processes critical to effective collaboration, it was logical to conclude that this framework would provide deeper insights into internal collaborative processes found within the ESF-15 function (see Emerson et al., 2012).

Research Tradition and Rationale for Selecting the Case Study Design

The case study research tradition serves as a means of eliciting deeper insights into what happened during a specific event bounded by location, time, and other contextual factors (Toma, 2014). Because I aimed to elicit a deeper understanding of the internal processes of collaboration between voluntary organizations during two specific events in Florida, the case study design presented a clear approach to understanding of

how collaborative processes evolved during hurricane response efforts. The case study design is used to understand the context of a situation by triangulating data from interviews, archival documents, and reports (Creswell et al., 2007).

Because I sought to gain a better understanding of how collaboration occurred between voluntary organizations in Florida's ESF-15 function during a natural disaster, the singular case study design was employed. A singular case study best suited the needs of this study for the reasons because (a) the study was bounded to a specific organization, time, and set of circumstances; (b) the case study design allowed for triangulation of data gathered from survey questionnaires, archival documents, and reports of various ESF-15 organizations involved in response efforts; and; (c) the design allowed for consideration of the context, organizational dynamics, external influences, and nuances that affected participants actions and perceptions (see Toma, 2014).

Role of the Researcher

My role as the researcher in this study was that of an observer ascertaining what happened in prior events from the result of surveys and archival data. While some studies necessitate researchers adopting active roles other than investigating incidents after the fact, the central focus of this case study was an event bounded by time and location (see Yin, 2011). As such, research was limited to eliciting what occurred through reviewing survey question responses and archival documents. Additionally, while I could have sought permission to observe collaboration between ESF-15 voluntary organizations during the annual statewide hurricane response exercise, the study would have been

limited to information gleaned solely from an event occurring in a controlled environment.

Relationship of Researcher to Participants

While I have participated in both emergency and natural disaster response efforts at the state and local levels of Florida government, these responses were limited to providing policy guidance or law enforcement services requested by municipal and county governments. Accordingly, I did not maintain relationships with potential participants or their ESF-15 function personnel.

Researcher Bias and Potential Ethical Issues

As a retired law enforcement officer, I have either responded to or coordinated relief efforts during various natural disasters. Given that these experiences occurred nearly 2 decades ago, I had no preconceived notions or existing biases that could have affected study outcomes. Additionally, I did not have influence or exert supervisory authority over any of the 35 organizations comprising Florida's ESF-15 function. As such, there were no existing power differentials or incentives that could have affected study participants.

Methodology

Participants

The participants for this study were nine emergency management coordinators representing 35 voluntary organizations that participate in Florida's ESF-15 function. Because all disasters in Florida are managed at the county level, each voluntary

organization relies on a county coordinator to manage response local response efforts. (Florida Division of Emergency Management, 2020).

To recruit participants for this study, the director of Emergency Management for Volunteer Florida, the agency charged with coordinating Florida's ESF-15 response efforts, forwarded an email on my behalf to each county-level ESF-15 voluntary organization's emergency management coordinator. The email detailed (a) the objective of the research; (b) how their organization could participate in the study; (c) a link to an anonymous, open-ended, Survey Monkey questionnaire; and (d) how each organization's information and responses would be kept anonymous by the survey response feature that sends responses directly to me as the researcher via Survey Monkey. Additionally, the director forwarded the email in a blind carbon copy format to ensure study participants did not view other participants' email addresses. Because the anonymous survey response feature only reported results from survey questions to the survey generator, each participant's information, responses, and email address remained anonymous.

The first survey question asked respondents whether their organization was involved with Florida's ESF-15 response to Hurricanes Irma, Matthew, and Michael. If the response was negative, the survey automatically concluded and respondents were thanked for their willingness to participate. This step precluded consideration of organizations that did not participate in the 2016–2018 relief efforts for Hurricanes Irma, Matthew, or Michael. Because all three hurricanes collectively traversed the Florida Peninsula, this approach yielded an overall view of ESF-15 voluntary organizational collaboration in Florida (see National Oceanic and Atmospheric Agency, 2016, 2017).

Sample Size

I drew the sample from voluntary emergency management coordinators representing each of the 35 ESF-15 voluntary organizations in Florida's 67 counties. Given the low number of survey responses received, all responses were analyzed and triangulated with findings from archival documents (see Galvin, 2020; Guest et al., 2020).

Data Collection Plan for Survey Instrument

I designed the questionnaire to establish a voluntary organization's stage on the IFCG, including (a) principled engagement, (b) shared motivation, and (c) capacity for joint action (see Berends & Chalmers, 2015; Emerson et al., 2012).

Survey Questions

I developed the survey questions seeking to ascertain the extent of collaboration between voluntary organizations and the degree to which elements associated with each of the IFCG components affected collaboration between ESF-15 organizations during humanitarian response efforts to Hurricanes Irma, Matthew, and Michael (see Appendix B).

Data Analysis Plan for Survey Questions

Data analysis of survey questions was iterative and consisted of the following phases: (a) compiling and organizing survey results; (b) raw data were disassembled into categories, such as themes, key phrases, codes, and words; (c) data were organized into an dependent variable (i.e., principled engagement, shared motivation, and capacity for joint action) and independent variable (i.e., the collaboration between ESF-15 voluntary

organizations) format; and (d) the nature of relationships between the dependent variables of principled engagement, shared motivation, and capacity for joint action to the independent variable of collaboration was detailed (Chigbu, 2019; Emerson et al., 2012). I detail each of the phases in the following subsections.

Compilation and Organization of Survey Data

This phase included organizing and assembling survey question responses for further review. I entered survey question responses into NVIVO 12 software to organize the data into a manageable format. Data were then examined in order to ascertain whether there were discrepant cases or apparent anomalies (see Yin, 2011).

Disassembly of Data Into Component Parts

Upon completion of the first phase, I broke data down into smaller parts for a more detailed examination. NVIVO software was employed as a means of eliciting themes, emerging patterns, and key phrases. This phase allowed for an in-depth review of the data and assisted me in gaining a deeper understanding of internal collaborative processes (see Yin, 2011). Once the data were gathered, the information was reviewed to establish themes and patterns about voluntary emergency management collaboration and served to assist with the development of a database.

Organizing Data Into an Independent and Dependent Variable Format

In order to answer the two research questions for the study, I subdivided the survey response data into two categories: (a) data detailing the effect of components of the IFCG on collaboration between voluntary organizations and (b) data indicating the

extent of collaboration between voluntary organizations during hurricane response efforts (see Emerson et al., 2012).

With the first data category, I examined how components of the IFCG affected interagency collaboration between ESF-15 voluntary organizations during the hurricane response efforts of 2016–2018. In order to better understand what affect components of the IFCG had upon collaboration during response efforts, the three components of the framework were considered as dependent variables and collaboration served as the independent variable. I gauged the impact of the dependent variables of principled engagement, shared motivation, and capacity for joint action upon the independent variable of collaboration by responses to survey questions that asked the degree to which elements, deemed essential to each component of the IFCG, were present during collaborative efforts and the role played by each element during the process. For example, Emerson et al. (2012) posited that collaboration is fostered when the following elements of the principled engagement component are present: (a) discovery of shared interests or values; (b) a clear definition of purposes and objectives; (c) deliberation of issues, roles, and expectations; and (d) determination as to how to arrive at decisions and solutions.

The second data category provided insights into the extent of collaboration between ESF-15 organizations during Florida’s ESF-15 response to Hurricanes Matthew, Irma, or Michael. I used data gleaned through responses to the survey question of “To what extent did collaboration occur between voluntary organizations in response to

Hurricanes Irma, Matthew, and Michael?” to determine the level of collaboration reported by voluntary organizations during Florida’s 2016–2018 hurricane responses.

Role of IFCG Components

I ascertained the role played by components of the IFCG by the presence, or lack thereof, of elements in each component during the process of collaboration (illustrated in Table 1).

Table 1

Elements Indicating the Presence of Collaboration by Component

Principled engagement	Shared motivation	Capacity for action
Discovery of shared interests or values	Mutual trust	Procedural and institutional arrangements to manage response efforts
Clear definition of objectives	Understanding other organizations	Established leadership roles within the ESF-15 group
Debate of issues, roles, and expectations	Commitment towards working to achieve common goals	Predetermined means of arriving at solutions
Determination as to how to arrive at decisions	Crossing organizational lines	Information and resource sharing between organizations

Detailing Relationships Between Dependent Variables and the Independent

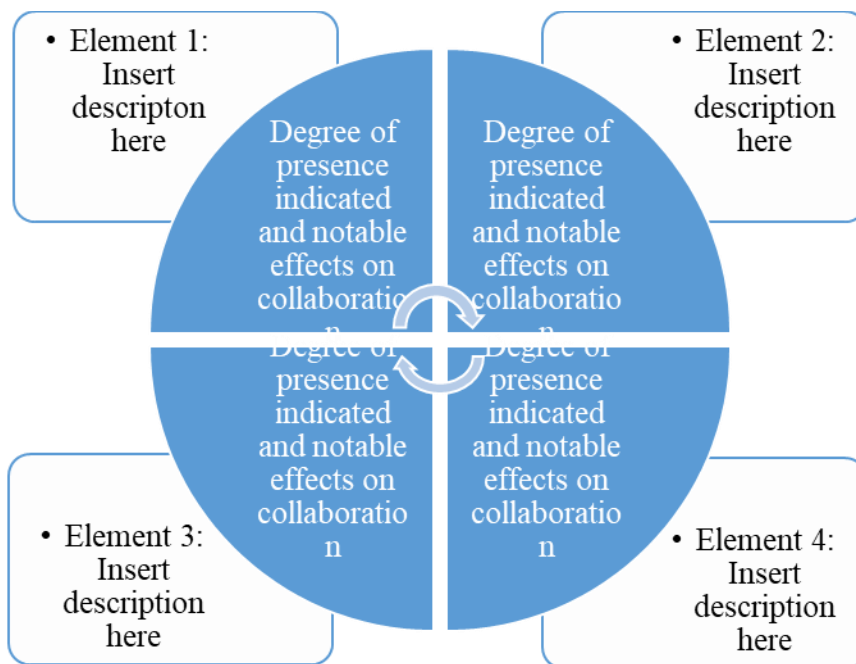
Variable

I diagrammed the relationships between the dependent variables of principled engagement, shared motivation, and capacity for joint action upon the independent variable collaboration to illustrate the nature of relationships between each independent variable and the dependent variable of collaboration. A template for depicting the relationships between each dependent variable and the independent variable was

constructed to better understand each relationship's effectual nature (illustrated in Figure 2).

Figure 2

Template Depicting Relationships Between the Independent Variable and a Dependent Variable



The process of analyzing survey question data yielded insights into the degree of collaboration present during Florida's ESF-15 response to Hurricanes Matthew, Irma, and Michael besides validating or refuting whether elements of IFCG were present during response efforts. I triangulated survey question results and analysis with findings from the review of archival documents to establish validity and reliability (see Yin, 2014).

Principled Engagement

Four questions were asked on the survey to determine whether the voluntary organization exhibited principled engagement. These questions included: (a) whether the

organization shared the same interest and values with other organizations? (b) if a clear definition of roles and values existed during hurricane response efforts? (c) whether the deliberation of issues, roles, and expectations between other voluntary organizations was part of the process?; and, (d) if voluntary organizations established how to arrive at decisions and solutions?

Shared Motivation

Four questions were asked on the survey to determine whether the voluntary organization exhibited shared motivation. The questions included: (a) the degree of mutual trust between voluntary organizations during hurricane response efforts? (b) whether voluntary organizations understood each other's capabilities, limits, and respective missions? (c) the degree of commitment between voluntary organizations towards working to achieve common goals?; and, (d) whether voluntary organizations were capable of crossing organizational lines to accomplish a common purpose?

Capacity for Joint Action

Four questions were asked on the survey to determine whether the voluntary organization exhibited a capacity for joint action. The questions included: (a) the importance of procedural and institutional arrangements when managing response efforts; (b) whether established leadership roles within the ESF-15 group were essential to accomplishing the mission? (c) the importance of predetermined means of arriving at solutions facing voluntary organizations?; and, (d) the degree of information and resource sharing between ESF-15 organizations?

Extent of collaboration

The extent of collaboration between voluntary organizations was determined by responses to the first survey question, which asks: “To what extent did collaboration occur between ESF-15 voluntary organizations, during Hurricane(s) Matthew, Irma, or Michael?” The question aims to illicit respondents’ perceptions, understandings, and thoughts in their own words (Rudestrum & Newton, 2007). Survey question responses were arrayed to ascertain the extent of collaboration during hurricane response efforts and reported in Chapter Four.

Data Collection Plan for Archival Documents

The secondary form of data collection for this study involved the review of archival documents from the following sources: (a) Florida’s public archives; (b) Division of Emergency Management after-action reports; (c) local and county governmental agency reports; (d) FEMA reports; and, (e) General Accounting Office reports. Data from each of these sources were collected from federal, state, and local government web portals.

Archival data gathered were systematically reviewed for references to collaboration involving voluntary organizations. References to collaboration were analyzed according to the data analysis plan and was compared with data gleaned during the interview process. This comparison allowed me to triangulate all forms of data associated with voluntary organization collaboration during ESF-15 responses to Hurricane(s) Irma, Matthew, and Michael.

As the collection of archival documents involved disaster response records maintained in federal and state archives, careful attention was given to both statutory and administrative rules regarding record retention and dissemination (Florida Public Records Act, 1967/2021).

Date Analysis Plan for Archival Documents

Data gleaned from the review of archival documents were analyzed similarly to data from survey question responses. The process was sequential and involved the following steps: (a) compiling archival data associated with ESF-15 collaboration; (b) categorizing data into themes, keywords, and phrases; (c) interpreting and analyzing data; and, (d) data retention and storage (Yin, 2011). Each step of the process is detailed below.

Compiling Archival Data Associated With ESF-15 Collaboration

Data from archival documents involving ESF-15 collaboration during Hurricane(s) Matthew, Irma, and Michael were organized and entered into NVIVO software to elicit critical themes, words, patterns, and phrases. Data were also examined to establish if there are any discrepancies or unusual patterns (Yin, 2011).

Organizing Data

Data were organized based on themes, keywords, patterns, and phrases to build a database (Yin, 2011; et al., 2016). The database allowed for more in-depth analysis and comparison to results from survey questions.

Interpreting and Analyzing the Data

This study would have been incomplete without both a substantive analysis and narrative describing the effect of internal processes on collaboration in Florida's ESF-15 function. With this in mind, archival data were objectively analyzed to provide both sound analysis and a fitting narrative from which to develop findings (Yin, 2011). Archival data findings were compared to survey question results to validate or refute questionnaire findings.

Data Storage and Retention

Archival and survey question data are stored in a secure physical location and in the case of electronic data, maintained on both a password-protected USB drive and personal laptop computer. Archival data required storage and maintenance per applicable Florida Statutes and the Florida Administrative Code. All forms of data will be destroyed after either their statutory or Institutional Review Board (IRB) retention period has been completed.

Issues of Trustworthiness

Qualitative researchers must ensure that data derived from their studies are valid, transferable, dependable, and confirmable. Unlike quantitative research, where validity hinges on design controls and statistical methods that maintain control of variables, researchers employing qualitative methodology must identify and mitigate potential threats to validity (Maxwell, 2010).

Qualitative researchers triangulate multiple sources of data to develop a clearer understanding of the meaning and intent of what participants are attempting to relate

when answering questions (Toma, 2011). To establish a higher degree of internal validity, this study triangulated data gathered from response to survey questions from ESF-15 personnel and archival data reviews.

For a qualitative study to be considered externally valid, it must apply to studies addressing similar issues or facing like research questions (Toma, 2011). This study addressed issues of external validity by applying elements of an existing framework towards a research problem involving emergency management in Florida. Accordingly, the research approach of the study is transferable to other studies of emergency management collaboration.

Dependability is another aspect of qualitative research that relates to the degree data is accurately and impartially collected, analyzed, and reported. Towards this end, I adhered to an evidence-based approach considered discrepant cases (Yin, 2011). In order to maintain both dependability and confirmability, I triangulated data from numerous sources, maintained a chain of custody for evidence derived from fieldwork, and arrived at conclusions based solely on fact (Yin, 2011).

Ethical Issues

As this study involved data gathered from both a survey questionnaire and archival document reviews that involved people, it was imperative that research was conducted in a manner consistent with established norms, university policy, in addition to applicable state and federal law.

Moreover, as information gathered during the research phase of the project may have contained sensitive information regarding persons or organizations, I abided by

university and IRB directives regarding the privacy, maintenance, and storage of all records developed during the research phase. Accordingly, I sought and received approval from the university IRB (Approval Number 05-27-22-0282322) before conducting fieldwork and abided by all directives regarding both data collection and the final work product.

Summary

This chapter detailed the methodology, research design and rationale, role of the researcher, issues of trustworthiness, and ethical concerns associated with this study. Chapter 4 provides results to both the survey questionnaire and archival review of documents associated with Florida's ESF-15 voluntary organization collaborative response efforts to Hurricane(s) Irma, Matthew, and Michael.

Chapter 4: Results

I conducted this qualitative case study to better understand how voluntary organizations collaborated and coordinated response efforts within the ESF-15 function of Florida's emergency management system during hurricane response and recovery efforts. The case study design used for this study involved an online survey distributed to emergency management coordinators representing each of the 35 voluntary organizations in Florida's ESF-15 function. Surveys were anonymously distributed to county-level emergency management coordinators by Volunteer Florida who serves as the lead agency for Florida's ESF-15 function. I triangulated the survey results with data gathered from archival document reviews to confirm the findings.

In this chapter, I provide the results of the study regarding how voluntary organizations collaborated during hurricane response and relief efforts in Florida from the viewpoint of county-level emergency management personnel. The chapter is divided into five sections: research questions, demographics and data collection, data analysis, evidence of trustworthiness, and results.

Research Questions

The two research questions for this study were:

Research Question 1: To what extent did collaboration occur between voluntary organizations in response to Hurricanes Irma, Matthew, and Michael?

Research Question 2: What role did the three components of the IFCG play in the response?

Demographics and Data Collection

All county-level emergency managers or coordinators representing the 35 organizations in Florida's ESF-15 function were forwarded an online survey from Volunteer Florida. Surveys were distributed and returned anonymously to protect respondents' identities. The completed surveys were returned over 10 days to the Survey Monkey host server. Nine surveys were returned with five participants responding to all survey questions.

I collected survey data for 10 days and reviewed archival documents from FEMA, state, county, and municipal after-action reports during the same time frame. Additionally, reports and studies from the Governmental Office of Accountability, NVOAD, and other voluntary organizations were examined to triangulate all forms of data associated with hurricane response and relief efforts in Florida.

Data Analysis

Survey Question Data Analysis

Data analysis of survey questions was sequential and consisted of the following phases: (a) survey data were compiled and organized; (b) raw data were coded in order to develop central themes; (c) data were organized in a manner similar to a dependent (i.e., principled engagement, shared motivation, and capacity for joint action) and independent (i.e., the collaboration between ESF-15 voluntary organizations) variable format; and (d) the nature of relationships between principled engagement, shared motivation, and capacity for joint action and collaboration was determined (see Chigbu, 2019; Emerson et al., 2012). I describe each of these phases in the following subsections.

Compilation and Organization of Survey Data

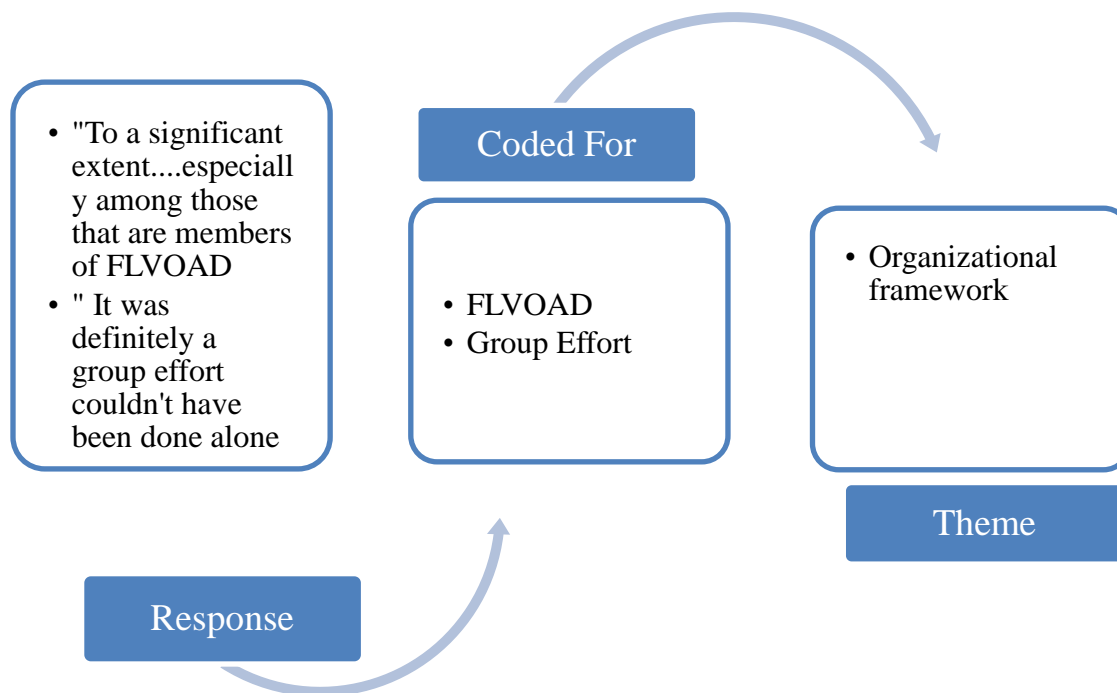
I transferred survey response data from Survey Monkey into NVIVO 12 software and initially organized the data based on responses to the two survey questions. Survey question responses were then reviewed to establish whether there were any outliers, discrepancies, or anomalies (see Yin, 2011).

Disassembly of Data Into Component Parts

The second phase involved organizing data into codes from which themes and patterns were developed. The NVIVO word cloud feature assisted in identifying key phrases and recurring word patterns in survey responses. Given the volume of data generated from survey responses, I examined each question in turn to allow for easier identification of both phrases, recurring word patterns, and subsequent development of codes. An example of how themes were developed from responses to the first research question is illustrated in Figure 3.

Figure 3

Process of Developing Themes to Survey Question Responses



Organization of Data Into an Independent and Dependent Variable Format

To address the two research questions, I subdivided the survey data into two parts: (a) data detailing the effects of elements of the IFCG on collaboration between voluntary organizations and (b) data showing the degree of collaboration between voluntary organizations during hurricane response and relief efforts.

I examined the data detailing the effects that elements of the IFCG according to survey response results that indicated either their presence or absence during collaborative processes. According to the IFCG, the presence of the three framework components corresponds to the degree of collaboration between the organizations involved (Emerson et al., 2012). To establish whether this was the case during ESF-15

voluntary organizations' response to Hurricanes Matthew, Irma, and Michael, the three components of the IFCG were considered as independent variables while collaboration served as the dependent variable.

Detailing Relationships Between Independent and Dependent Variables

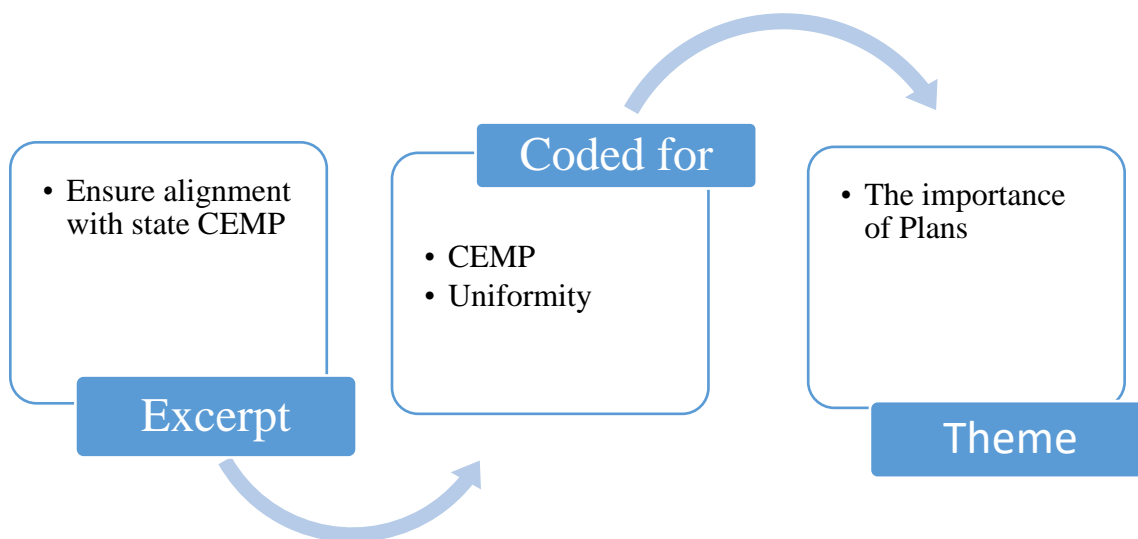
I organized survey question responses by component, and the degree of collaboration was shown by illustrating the degree to which the four elements of each component were found in survey question responses. Survey question results were then triangulated with findings from the analysis of archival data documents to establish validity and reliability.

Archival Document Analysis

While the results obtained from the archival document review were less specific than survey question responses, they did confirm most of the survey data. The review of archival documents included examining data from the (a) Florida Division of Emergency Management after-action reports; (b) county, municipal, and sheriff's office after-action reports; (c) FEMA reports; and (d) Governmental Accountability Agency reports. I gathered archival documents from an open-source review of online reports and stored them on a secure, password-protected, personal computer and USB drive. Because the reports involved public documents subject to state and federal statutes, rules, and guidelines, all data were maintained in accordance to current law. Document analysis occurred in a manner similar to the procedures outlined for survey data analysis, and this process is illustrated in Figure 4.

Figure 4

Process of Developing Themes From Archival Data



I noted a few minor discrepancies during the survey data review. Because most of these appeared to be a matter of participants either emphasizing matters unrelated to a question or expressing the opinions of other organizations, the discrepancies were duly noted and taken into account.

Evidence of Trustworthiness

Credibility

To establish the credibility of this study, I used strategies designed to identify and mitigate potential threats to the validity of survey data and the methodology used. The first strategy involved ensuring that survey data were gathered impartially and anonymously, wherein each respondent did not know the nature of questions or responses from other individuals. I employed this strategy by using the anonymous feature of the

Survey Monkey program and asking Volunteer Florida to distribute surveys in a blind carbon copy fashion. A second strategy was to triangulate data from multiple sources to establish greater internal validity. Survey data from ESF-15 personnel were compared with the results from a review of archival data to better understand the meaning and intent of what survey respondents were trying to say (see Toma, 2011).

Transferability

I purposely designed this study to be transferable to similar studies focused on emergency management collaboration. As such, the existing theory underlying the IFCG can be transferred to study similar research problems in the field of emergency management (see Toma, 2011). The IFCG could also be used in broader studies involving emergency management, law enforcement, and general governmental operations.

Dependability

As previously described in Chapter 3, dependability was maintained by ensuring that both survey and archival data were accurately and impartially collected, analyzed, and reported. Towards this end, I maintained an evidence-based approach and addressed irregular or discrepant cases (see Yin, 2011). To maintain both dependability and confirmability, I triangulated data from numerous sources, maintained a chain of custody for data collected, and arrived at conclusions based solely on fact (see Yin, 2011)

Results

Collaboration plays a vital role in Florida's responses to the vast array of emergency management challenges posed by natural disasters and other tragic events. I

conducted this study to better understand how volunteer organizations collaborate as they respond to and assist in recovering from natural disasters. In the following subsections, I address the study's research questions and discuss themes that emerged from the survey and archival data.

Research Question 1

Each survey question participant indicated that a high degree of collaboration between voluntary organizations was present during hurricane response efforts. For example, Participant 2 stated,

Our agency collaborated with multiple organizations during Irma and Matthew. We acted as the lead agency for ESF-15 at our Emergency Operations Center. It definitely was a group effort and could not have been done without help from one another.

Other participants mentioned the importance of the VOAD partnerships to the collaborative process. Participant 4 noted that collaboration occurred "To a significant extent, especially among those that are members of the Florida and/or national VOAD."

Additionally, most of the participants emphasized the importance of utilizing existing frameworks as part of the collaborative process. Participant 3 shared that, "FLVOAD [Florida VOAD] and multiple NGOs hosted partner calls during all three of these to coordinate and collaborate resources. Following Irma, working groups were established with the FLVOAD partners to include VOL FL [Volunteer Florida] focusing on specific tasks".

Research Question 2

To establish the effect each component had upon voluntary organization collaboration within Florida's ESF-15 function, I posed three survey questions regarding whether specific elements in the respective components were present. Participant responses were then illustrated on a template to understand their effect on the collaborative process.

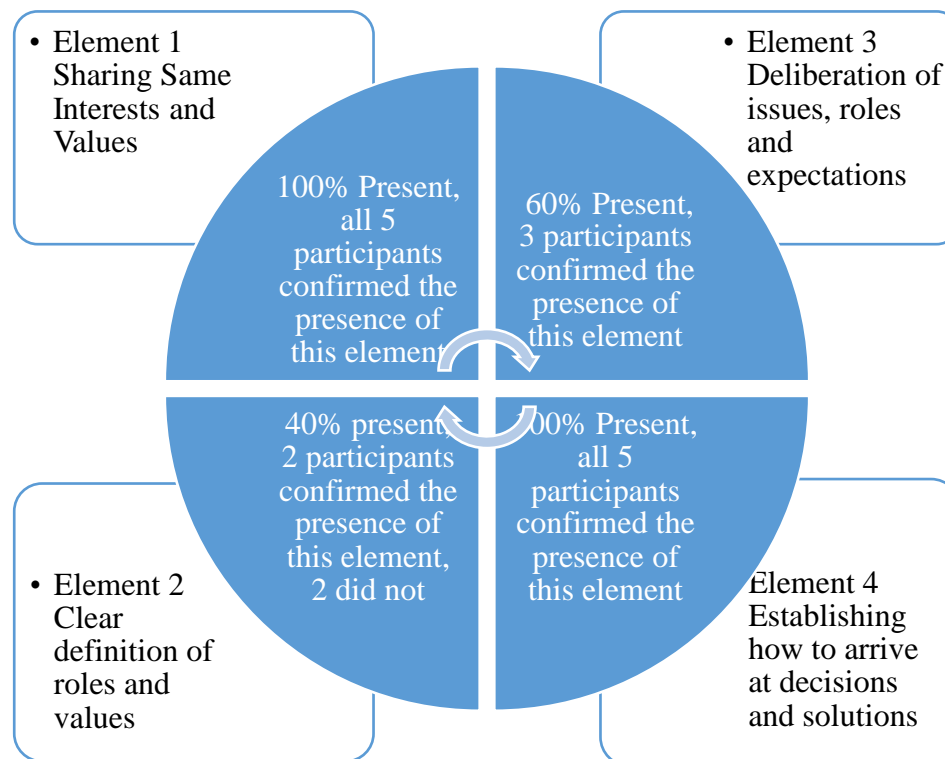
Survey Question Responses by Component

Principled Engagement

These survey questions addressed whether organizations exhibited principled motivation during hurricane response and relief efforts. These survey questions included: (a) Whether the organization shared the same interest and values with other organizations? (b) Did a clear definition of roles and values exist during hurricane response efforts? (c) Whether the deliberation of issues, roles, and expectations between other voluntary organizations was part of the process? and (4) If voluntary organizations established how to arrive at decisions and solutions? Figure 5 illustrates the responses to each question.

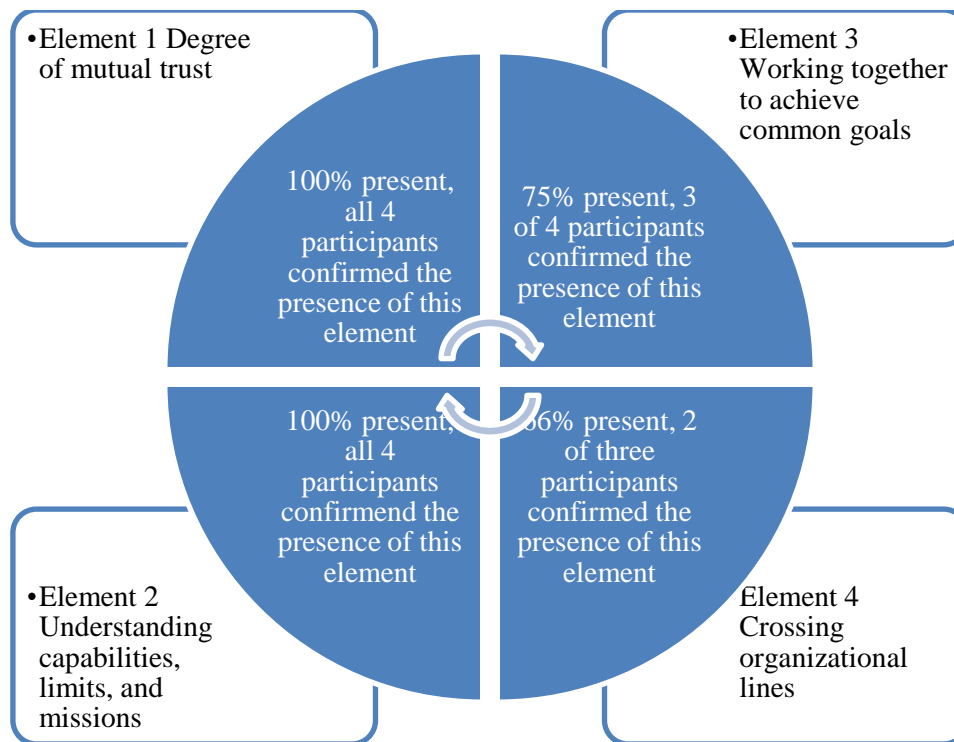
Figure 5

Presence of the Elements of Principled Engagement and Their Impact on Collaboration



Shared Motivation

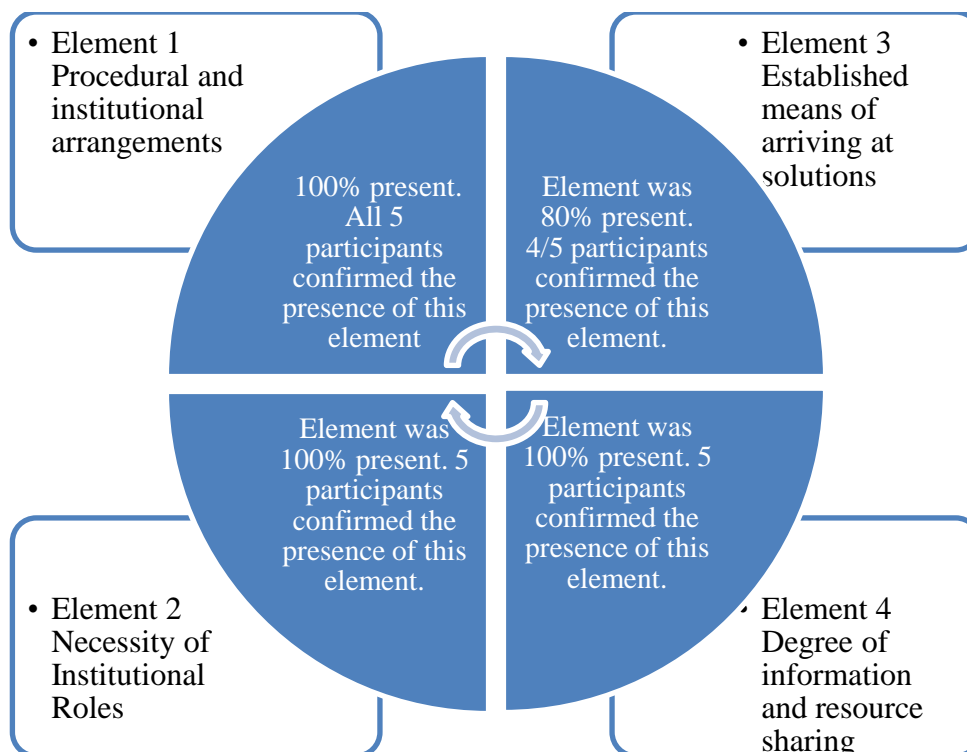
Four questions were asked to establish whether voluntary organizations exhibited shared motivation: (a) What was the degree of mutual trust between voluntary organizations during hurricane response efforts? (b) Whether voluntary organizations understood each other's capabilities, limits, and respective missions? (c) What was the degree of commitment between voluntary organizations towards working to achieve common goals? and (d) Whether voluntary organizations were capable of crossing organizational lines to accomplish a common purpose? The related survey responses are detailed in Figure 6.

Figure 6*Presence of the Elements of Shared Motivation and Their Impact on Collaboration***Capacity for Joint Action**

Four questions sought to establish whether the degree to which voluntary organizations exhibited a capacity for joint action. The questions included: (a) the importance of procedural and institutional arrangements when managing response efforts; (b) whether established leadership roles within the ESF-15 group were essential to accomplishing the mission? (c) the importance of predetermined means of arriving at solutions facing voluntary organizations?; and, (d) the degree of information and resource sharing between ESF-15 organizations? The responses are illustrated in Figure 7.

Figure 7

Presence of the Elements of Capacity for Joint Action and Their Impact on Collaboration



Survey Question Regarding Communication

Survey Question 3 asked how voluntary organizations communicated with each other during response and relief efforts to Hurricane(s) Matthew, Irma, and Michael. Most participants indicated that communication flowed linearly and involved contacting the local or state emergency operations centers via email, landline, or cellular telephone.

Several participants also noted that county and state emergency operations centers served as the hub for resource, assistance, or clarification requests.

Participant 2 stated:

Most volunteer needs came into the EOC and directed to our agency as the the lead agency for volunteers and donations. As the lead agency we were the middle man to bring together people who had needs with the people willing to help.

The role of state county EOCs as intermediaries was also described by Participant 4 as occurring: “Through Florida VOAD ESF-15 facilitated calls, through National VOAD efforts, and through the efforts of FEMA Voluntary Liaisons.” This sentiment was echoed by Participant 1: “Communication was done through emergency management and the Red Cross.”

Major Themes Emerging From Survey Responses

Theme 1: Organizational Frameworks

The first theme from survey question responses was that organizational frameworks play an integral role in collaboration. This theme was notably present in responses to Research Question 1, which asked to what extent organizations collaborated during hurricane response efforts. Over 60% of the participants indicated that collaboration depended on group efforts conducted in concert with the state VOAD, local Community Organizations Active in Disasters (COADs), or FEMA.

The theme remained constant in responses to survey questions regarding the method of communications during response efforts, principled engagement, and capacity for joint action. Moreover, participants emphasized the importance of using state and county CEMPs as the procedural guideline to assist during response efforts.

Theme 2: Teamwork

A second theme emerging from survey question responses was the importance of teamwork within the ESF-15 framework. While participants indicated that teamwork was an essential part of collaborative response efforts in responses to most survey questions, the theme was most prevalent in responses to Survey Question 4, which asked about principled engagement. Moreover, participants indicated that needs were assigned based on organizational capability and that each organization worked as part of a team or group to meet needs. For example, Participant 3 detailed how organizations worked in tandem to help survivors after a hurricane:

Our organization focuses on Disaster Preparedness, Response, Relief and Recovery. Most of the organizations we collaborated with also focused on at least one of these areas. Everyone who worked together had the goal of helping our community members who were impacted by the storms.

Other participants noted the importance of sharing information and coordinating efforts with Volunteer Florida and county emergency operations centers to avoid duplication of services. Participant 4 described how:

Most groups worked together or took on specific areas to ensure that there was no duplication. It was important to have an agency that was working with all the other groups to make sure it stayed effective and that groups were not duplicating efforts with the same clients.

Theme 3: Communication

Another common theme in most survey question responses was the importance of communication. This theme was repeated to a greater degree in responses to Survey Question 5, which asked about shared motivation. Participants indicated that effective communication was essential to understanding different organizations' roles, capabilities, and responsibilities in addition to building networks before crisis situations. For example, Participant 4 indicated that:

We do our best to find this information out during “blue skies” through our COA group and by listening to the FL VOAD meetings. There are always some groups that we learn about in the midst of a storm and those we just do our best to learn about as much as possible as quickly as possible

Participants also indicated that communication was essential to building trust between organizations as it is vital to the collaborative process. Participant 3 noted: “We did our best to have regular communications with all partners to prevent any trust issues.” In addition to building trust, communication was essential to maintaining the internal processes vital to collaborative efforts.

Theme 4: The Importance of Internal Processes

The fourth theme centered on the need to follow existing county and state CEMPs to guide internal collaborative processes. While this theme was present throughout responses to every survey question, the theme was most mentioned in responses to Question 6, which asked about capacity for joint action.

For example, Participant 4 noted that problems were better solved by: “Following applicable CEMPs was much more of a factor than the loosely defined procedures of ESF 15 and the Florida VOAD.” this sentiment was reiterated by Participant 2, who stated that institutional and organizational arrangements were less critical than existing frameworks as: “they played much less of a role than the local and state CEMP.”

Major Themes Emerging From Archival Documents

As previously mentioned, the archival document review was less conclusive than the results generated from survey questions. That said, the review revealed three themes related to themes elicited from survey question responses. What follows is a brief review of these themes

Theme 1: Planning

The first theme identified in the archival data review was the importance of CEMP and Continuity of Operations plans during hurricane response efforts. In several instances, the importance of ensuring that voluntary organization and county plans align with the state CEMP was stressed. (Florida Division of Emergency Management, 2016, City of Marco Island, 2018). Additionally, the need for better integration of logistical resource planning with voluntary organizational requirements was noted (Florida Division of Emergency Management, 2017, Governmental Accountability Office, 2019). The planning theme identified in the archival document review mirrored the importance of the theme of the organizational framework derived from survey question responses.

Theme 2: Communication

A recurring theme that emerged from several after-action reports was the vital role played by communications before, during, and after hurricane events. (Florida Division of Emergency Management, 2019). This was especially important from a logistical and operational standpoint as miscommunication between voluntary organizations affected supply distribution during a major hurricane event (Florida Division of Emergency Management, 2018).

The importance of technology and the need to maintain updated computer hardware, software, and network connectivity was a recurring subtheme in many of the after-action reports (Florida Division of Emergency Management, 2019, Governmental Accounting Office, 2019). An additional subtheme was the need for communications interoperability between different organizations, especially regarding mobile and hand-held radios during power outages (Citrus County Sheriff's Office, 2017).

Theme 3: Coordination of Efforts

The final theme emphasized the importance of coordinating efforts to eliminate redundancy and enhance the delivery of goods and services to those in need. For example, Organization 1 noted: "there needs to be a better understanding of how multiple entities that provide the same resources coordinate together. Two areas in particular that were identified during this operation were food acquisition and generator/pump sourcing" (Florida Division of Emergency Management, 2018).

In addition to coordinating resource delivery and distribution efforts, several after-action reports emphasized the importance of coordination across ESF-15.

Organization 2 suggested: “Continue coordination with ESF-15 partners to better enhance Branch Operations” (Florida Division of Emergency Management, 2017).

Findings and Summary

In this chapter, the two research questions for this study, namely: (1) to what extent did collaboration occur between voluntary organizations in response to Hurricane(s) Irma, Matthew, and Michael?; and, (2) what role did the three components of the Integrative Framework for Collaborative Governance (IFCG) play in the response? were addressed through participant responses to the six survey questions. Themes elicited by reviewing survey respondents’ answers to each question were triangulated with themes derived from a review of archival documents from municipal, county, state, and federal agencies. The findings are summarized below.

In response to Research Question 1, Participants indicated that a significant degree of collaboration occurred between voluntary organizations during responses to Hurricane(s) Irma, Matthew, and Michael. Moreover, Participants also emphasized the importance of organizational frameworks to the collaborative process. This theme was echoed in other survey question responses and in archival data.

Research Question 2 was addressed in Participant responses to Survey Questions 4, 5, and 6. As this series of survey questions aimed to establish whether components of the Integrative Theory of Collaborative Governance were present during collaborative processes, each component and concomitant survey question are addressed, in turn, in what follows.

Participant responses to Survey Question 4 revealed that while two of the elements of the principled engagement component were wholly present, two were not completely represented. Additionally, participants appeared to emphasize the theme of teamwork more than elements of role definition and deliberation. The archival data appear to confirm this finding.

Answers to Survey Question 5 revealed similar sentiments regarding elements associated with the component of shared motivation. While Participants indicated that two elements were present in their entirety, two were not. Participants emphasized the need for communication more than understanding each other's capabilities and commitment. This preference was similar to findings in archival data.

Participant responses to the final survey question indicated that each element of the capacity for joint action was present during the responses to Hurricane(s) Matthew, Irma, and Michael. Participants also alluded to the internal processes theme and the need to follow existing protocols as important factors when developing a capacity for joint action. This finding was reinforced by coordinating efforts and planning themes that emerged from archival data.

Participants indicated that voluntary organizations communicated in a linear fashion through county and state emergency operations centers. The principal means of communications involved emails, the state online emergency management portal, landline and cellular telephones, and portable radios. The archival data theme of communication confirmed this finding.

While Research Question 1 and Survey Question 3 appear to have been answered by survey question responses and confirmed through triangulating archival data, Research Question 2 requires further clarification as the findings are less conclusive. Chapter 5 will address this issue by providing further clarity as to the nature of the findings.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative case study was to develop a better understanding of how Florida's ESF-15 voluntary organizations collaborated and coordinated response efforts during natural disasters. I accomplished this by examining the degree to which components and concomitant elements of the IFCG were present during the response and recovery from Hurricanes Matthew, Irma, and Michael. Key findings from the study indicated that ESF-15 voluntary organizations collaborated effectively during response and recovery phases to each hurricane. Additionally, while seven of the component elements of the IFCG were present during hurricane responses, five were not wholly represented.

In this chapter, I interpret the study findings to confirm the applicability of IFCG to ESF-15 voluntary organization collaboration during hurricane response and recovery efforts. Additionally, the study's limitations, recommendations for further research, and implications to positive social change are also discussed.

Interpretation of the Findings

Research Question 1

Each participant indicated that a high degree of collaboration between ESF-15 voluntary organizations was present during the response and relief efforts to Hurricanes Matthew, Irma, and Michael. Participants attributed this to guidelines found in the overarching state CEMP and subordinate county CEMPs as well as involvement in both state and national VOAD organizations

Research Question 2

As noted in Chapter 4, Survey Questions 4, 5, and 6 asked to what extent elements of the IFCG were present during hurricane response efforts. The survey responses were less than conclusive regarding two of the elements: (a) the precise definition of roles and values and (b) the deliberation of issues, roles, and expectations. In the following subsections, I provide a brief review of the responses to these survey questions.

Survey Question 4: Principled Engagement Component. All the participants affirmed that their organizations shared the same interests and values with other organizations during the collaborative process and established how to make decisions together. Participants also noted that current county and state CEMPs procedurally address the roles, expectations, and deliberative processes to be used by voluntary organizations during response and recovery efforts. As such, two elements of the principled engagement component, namely (a) the precise definition of roles and values and (b) the deliberation of issues, roles, and expectations, identified in the IFCG are now incorporated into both county and state CEMPs.

Both elements are addressed in the state and all county CEMPs reviewed, wherein specific roles, expectations, and the deliberative process for solving problems and issues are clearly defined. The implications to the IFCG are that incorporating these elements into existing CEMPs strengthens that aspect of the framework because it reinforces the importance of role definition, issue deliberation, and the need for clear expectations.

Survey Question 5: Shared Motivation Component

Survey participants reported that their organizations exhibited a high degree of mutual trust and understood the capabilities, missions, and limits of other organizations. Participants did not entirely agree on the level of commitment to achieve common goals and the importance of crossing organizational lines during the process. Several suggested that the ESF-15 organizations have already committed to accomplishing group goals and “strip away competitive spirits or negativity” to accomplish tasks. One participant disagreed with the others regarding the necessity to cross organizational lines to achieve common goals

Communication was the thread connecting responses to each of the survey questions. The theme of communication was prevalent throughout most participants’ responses to survey questions related to each element. Additionally, the organizational framework theme ran a close second as many respondents indicated the ESF-15 framework stresses the need for commitment and crossing organizational lines to achieve common goals. Accordingly, elements of the IFCG appear to have been eclipsed by the emphasis on communication and adhering to the ESF-15 framework detailed in county and state CEMPs.

Survey Question 6: Capacity for Joint Action Component

Participants unanimously agreed that each element of the joint action component were present during hurricane response and relief efforts. Participants also noted that organizational frameworks and internal processes were integral to fostering a capacity for joint action and effective collaboration between ESF-15 organizations. Moreover, they

frequently stressed the importance of repeated simulations and exercises to foster familiarity and acquaint organizations with each other.

Applicability of Findings to Theory

According to IFCG, collaboration results from the interactive response of the components of principled engagement, shared motivation, and capacity for joint action to external factors, prompting the need for a collaborative response and systemic adaptations. In this study, I sought to ascertain the degree to which collaboration occurred during ESF-15 hurricane response and relief efforts by gauging the presence of each component and concomitant element.

Participants indicated that most elements comprising the principled motivation component were present throughout the ESF-15 response and relief efforts. Two participants stressed the importance of county and state CEMPs in addition to coordinating efforts through Volunteer Florida throughout the response and relief efforts. Participants also noted the significant role working groups play when developing solutions to problems.

Elements comprising the component of shared motivation were also present to a great degree during hurricane response and relief efforts. Participants indicated that most elements of shared motivation were present throughout the process. Moreover, participants stressed that the elements of mutual trust and teamwork were vital to the collaborative process. Additionally, the theme of teamwork was present in all elements of shared motivation and was reinforced by archival document data.

Elements of the capacity for joint action component received participants' highest degree of support. The participants' survey question responses reflected that they unanimously agreed with three of the four elements and slightly differed regarding the importance of sharing information. Like responses to survey questions regarding the principled engagement and shared motivation components, participants noted that many elements were embedded into the state CEMP and reinforced by Volunteer Florida policies.

Accordingly, components of the IFCG appear to have been significantly present during the response and recovery efforts to Hurricanes Irma, Matthew, and Michael. Additionally, state and county CEMPs incorporated many elements of each component in their plans.

Limitations of the Study

The study was limited by two factors: (a) the scope of the study was limited to a highly developed subset of Florida's emergency management system and (b) the number of survey responses received. In the first instance, the scope of the study focused on Florida, which has developed a broad array of experience dealing with natural and other disasters. The other factor potentially limiting the study was the low number of survey responses received. While surveys were forwarded to all voluntary emergency managers representing the 35 voluntary organizations housed in Florida's ESF-15 function, only nine were returned. Of the nine responses, five participants fully answered the survey questions.

Recommendations

In order to enhance Florida's ESF-15 response capabilities and gain further insights into emergency management collaborative processes, I have the following recommendations: (a) consistently provide training and hold frequent exercises involving organizations within the ESF-15 construct (b) conduct all-hazards training and exercises involving ESF-15 organizations and (c) adopt the IFCG in future studies of emergency management voluntary organization collaboration in other geographic locations. In the following subsections, I provide a more in-depth discussion of each recommendation.

Provide Training and Hold Frequent Exercises Involving ESF-15 Organizations

The participants indicated that the combination of organizational frameworks, teamwork, communications, and internal processes is essential to effective emergency response. Participants also noted that training and exercises are vital to developing and enhancing these factors. Based on these findings, emergency managers should consistently provide training and hold exercises based on real-world scenarios

ESF-15 training exercises could be conducted during the annual Governor's Hurricane Conference because key Volunteer Florida, VOAD representatives, and related ESFs are present at the conference. In addition to the annual Governor's Hurricane Conference, ESF-15 organizations could use tabletop exercises as a less expensive means of developing and enhancing current capabilities and familiarizing new voluntary organizations or personnel with ESF-15 procedures and the state emergency management system.

All-Hazards Training and Exercises Involving ESF-15 Organizations

Hurricanes constitute the greatest annual threat to Floridians, given their frequency, intensity, size, and amount of damage wrought by the deadly combination of wind and water. Over the past three decades, 23 named hurricanes made landfall on the Florida peninsula, six of which inflicted catastrophic damage throughout affected areas with sustained wind speeds above 130 mph (National Oceanic and Atmospheric Administration, n.d.). Accordingly, a great deal of emphasis is placed on hurricane mitigation, preparation, response, and recovery throughout Florida's emergency management system given the high probability of future hurricane events.

Florida faces threats, beyond hurricanes, with the potential to cause significant loss of life, infrastructure damage, or play havoc on the state's economic well-being. While some threats (e.g., terrorism, cyberattacks on financial and critical infrastructure systems, or radiological disasters) are both anticipated and accounted for in state and local CEMPs, the reality is that "bolt out of the blue" events can occur.

The COVID-19 pandemic is an example of how low probability high consequence events can adversely impact the health and well-being of Floridians, the state's economy and impact travel and trade. While such occurrences are difficult, if not impossible, to anticipate, plan or adequately train for, their effects can be lessened by maintaining an all-hazards approach to emergency management.

As such, in addition to the above recommendations about training and exercises, it is important that Floridian emergency managers continue to use the all-hazards approach when preparing for future disasters. The all-hazards approach is defined as "...an

integrated approach to emergency preparedness that focuses on identifying hazards and developing emergency preparedness capacities and capabilities that can address those in addition to a wide spectrum of emergencies or disasters” (Law Insider, n.d.). Continued emphasis on the all-hazards approach to emergency management will better prepare ESF-15 organizations to respond to unanticipated disasters or occurrences, such as COVID – 19, in the future. Additionally, using an all-hazards approach will allow Florida’s emergency managers to simultaneously prepare for known hazards (i.e. hurricanes) in addition to unexpected disasters or rarely occurring events.

Apply the IFCG to Other Geographical Areas

Future studies might benefit from approaching emergency management collaboration in the context of other state emergency management systems governed by different statutes, policies, procedures, and organizational constructs. For example, while the findings from this study may apply to large coastal states with several major metropolitan areas, diverse populations, and vast infrastructure, they may be less germane to smaller inland states consisting of predominantly rural counties.

Additionally, while all state emergency management systems follow general federal guidelines and ESF structures, some states face threats, such as snow and ice storms, blizzards, earthquakes, and mountainous wildfires. As such, their response mechanisms and structures may differ from Florida’s with regards to meeting humanitarian needs. Applying the IFCG to a study of a state with different topography and demography as well as facing unique threats may yield more profound insights into collaborative processes.

Social Change Implications

VOADs play a vital role across the full spectrum of emergency management phases including, preparedness, mitigation, response, and recovery. With respect to response and recovery, VOADs augment federal, state, and local efforts with additional resources, skills, and capabilities that enhance the community's ability to respond successfully and recover from natural and human-caused disasters.

It is vitally important that VOADs are integrated into federal, state, and local efforts to ensure the most efficient and effective response and recovery. This study helps emergency managers better understand how the collaborative process enhances the ability of emergency managers to effectively use VOAD resources and personnel in response to humanitarian disasters. This study highlights how the successful integration of VOAD resources via enhanced collaborative efforts can improve response and relief efforts and, in turn, save lives, mitigate suffering, and protect property. Emergency managers can use the findings and recommendations from this study to develop strategies that maximize VOAD resources in disaster response and recovery.

This study also helps emergency managers better understand interactions between external factors, collaborative components, and their subsequent influence on collaborative outcomes. It provides emergency managers with the means to streamline efforts and operate efficiently. The effective use of VOADs engages the community in response and recovery by leveraging local knowledge and resources. The engagement helps communities and people heal from catastrophic incidents.

Collaboration is vital in Florida's emergency responses to the state's myriad threats. This holds especially true concerning providing humanitarian supplies and services to affected Floridians. This study gained significant insights into how collaboration occurred during hurricane events, what impediments existed, and how outcomes may be improved. Though this study focused on hurricanes, the insights, findings, and recommendations fit within the all-hazards model of emergency management because they are applicable to other types of emergencies and disasters.

Conclusion

Hurricanes produce a challenging set of circumstances requiring significant response and recovery capabilities. In the case of major hurricanes, the degree of destruction wrought by wind damage, storm surge, and flooding amplify the need for an effective, timely, and robust response. Such a response requires effective collaboration between voluntary organizations charged with delivering humanitarian resources and services to a population often facing significant losses. Understanding how collaboration occurs and what can be done to improve collaborative processes will enhance and improve future responses to hurricanes and other disasters. The IFCG provides a significant resource to facilitate a deeper understanding of collaboration and improve future response and relief efforts.

References

- Allen, L. Y. (2011). Organizational collaborative capacities in disaster management: Evidence from the Taiwan Red Cross organization. *Asian Journal of Social Science*, 39(4), 446. <https://doi.org/10.1163/156853111X597279>
- Akerlof, G. A., & Michailat, P. (2018). Persistence of false paradigms in low-power sciences. *Proceedings of the National Academy of Sciences of the United States of America*, 115(52), 13228–13233. <https://doi.org/10.1073/pnas.1816454115>
- Al-Tabbaa, O., Leach, D., & Khan, Z. (2019). Examining alliance management capabilities in cross-sector collaborative partnerships. *Journal of Business Research*, 101, 268–284. <https://doi.org/10.1016/j.jbusres.2019.04.001>
- Audet, M., Roy, M. (2016). Using strategic communities to foster inter-organizational collaboration. *Journal of Organizational Change Management*, 6, 878. <http://dx.doi.org/10.1108/JOCM-11-2013-0231>
- Barthe-Delanoe, A.-M., Montarnal, A., Truptil, S., Benaben, F., & Pingaud, H. (2018). Towards the agility of collaborative workflows through an event driven approach application to crisis management. *International Journal of Disaster Risk Reduction*, 28, 214–224. <https://doi.org/10.1016/j.ijdrr.2018.02.029>
- Aebischer Perone, S., Martinez, E., du Mortier, S., Rossi, R., Pahud, M., Urbaniak, V., Chappuis, F., Hagon, O., Jacquériorz Bausch, F., & Beran, D. (2017). Non-communicable diseases in humanitarian settings: ten essential questions. *Conflict and health*, 11, 17. <https://doi.org/10.1186/s13031-017-0119-8>

- Berends, L., Ritter, A., & Chalmers, J. (2016). Collaborative governance in the reform of Western Australia's alcohol and other drug sector. *Australian Journal of Public Administration*, 2, 137. <https://doi.org/10.1111/1467-8500.12154>
- Bistaraki, A., McKeown, E., & Kyratsis, Y. (2019). Leading interagency planning and collaboration in mass gatherings: Public health and safety in the 2012 London Olympics. *Public Health*, 166, 19–24. <https://doi.org/10.1016/j.puhe.2018.09.031>
- Brown, T. L., Gong, T., & Jing, Y. (2012). Collaborative governance in mainland China and Hong Kong: Introductory essay. *International Public Management Journal*, 15(4), 393-404. <http://dx.doi.org/10.1080/10967494.2012.761048>
- Bryson, J. M., Crosby, B. C., & Stone, M. M. (2006). The design and implementation of cross -sector collaborations: Propositions from the literature. *Public Administration Review*, 66, 44–55. <https://doi.org/10.1111/j.1540-6210.2006.00665.x>
- Bryson, J. M., Crosby, B. C., & Stone, M. M. (2015). Designing and implementing cross-sector collaborations: Needed and challenging. *Public Administration Review*, 5, 647. <https://doi.org/10.1111/puar.12432>
- Cienki, A. (2015). Insights into coordination, collaboration, and cooperation from the behavioral and cognitive sciences: A commentary. *Interaction Studies*, 16(3), 553-560. <https://doi.org/10.1075/is.16.3.09cie>

- Cigler, B. A. (2001) Multi-organizational, multisector and multi-community organizations: Setting the research agenda. In M. P. Mandell (Ed.), *Getting results through collaboration: Networks and network structures for public policy and management* (pp. 71–85). Quorum Books.
- Chang, K., (2018). Exploring the dynamics of local emergency management collaboration in the United States —What we learned from Florida county and city managers' viewpoints. *EurAmerica*, 48(1), 1–71.
- Cheng, Y., (2019). Exploring the role of nonprofits in public service provision: Moving from co-production to co-governance. *Public Administration Review*, 79(2), 203–214. <https://doi.org/10.1111/puar.12970>
- Choi, O. S. (2004), Emergency management growth in the state of Florida. *State and Local Governmental Review*, 36(3), 212-226.
<https://doi.org/10.1177/0160323X0403600305>
- Choi, O. S., & Brower, R. S. (2006), When practice matters more than government plans: A network analysis of local emergency management. *Administration and Society*, 37(6). <https://doi.org/10.1177/0095399705282879>
- Citrus County Sheriff's Office Emergency Management. (2017). *After-action report/improvement plan*.
- City of Marco Island. (2018). *Hurricane Irma after-action report*.
<https://www.cityofmarcoisland.com/emergency/page/hurricane-irma-after-action-report>

- Cohen, G. (2018). Cultural fragmentation as a barrier to interagency collaboration: A qualitative examination of Texas law enforcement officers' perceptions. *American Review of Public Administration*, 48(8), 886–901.
<https://doi.org/10.1177/0275074017744659>
- Costa, M. M. (2017). Assessing government-nonprofit collaborations and density of nonprofit organizations in Brazil. *RAP: Revista Brasileira de Administração Pública*, 51(3), 330. <https://doi.org/10.1590/0034-7612155003>
- Creswell, J., Hanson, W., Clark-Plano, V., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *The Counseling Psychologist*, 35(2), 236–264. <https://doi.org/10.1177/0011000006287390>
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Sage Publications, Inc.
- Creswell, J., & Miller, D. (2000). Determining validity in qualitative inquiry. *Theory Into Practice*, 39(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2
- Currie, C. P. (2014). Opportunities exist to strengthen interagency assessments and accountability for closing capability gaps. *GAO Reports*, 15-20.
<https://www.gao.gov/products/gao-15-20>
- Desai, V. M. (2018). Collaborative stakeholder engagement: An integration between theories of organizational legitimacy and learning. *Academy of Management Journal*, 61(1), 220–244. <https://doi.org/10.5465/amj.2016.0315>

- Eller, W., Gerber, B. J., & Branch, L. E. (2015). Voluntary nonprofit organizations and disaster management: Identifying the nature of inter-sector coordination and collaboration in disaster service assistance provision. *Risk, Hazards & Crisis in Public Policy*, 3(2), 223–238. <https://doi.org/10.1002/rhc3.12081>
- Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory*, 22(1), 1-29. <https://doi.org/10.1093/jopart/mur011>
- Florida Division of Emergency Management. (2020). *Comprehensive Emergency Management Plan*. <http://floridadisaster.org/documents/CEMP>
- Florida Public Records Act, Fla. Stat. § 119 (1909 & rev. 2005).
http://www.leg.state.fl.us/STATUTES/index.cfm?App_mode=Display_Statute&Search_String=&URL=0100-0199/0119/Sections/0119.01.html
- Florida State Emergency Management Act, Fla. Stat. § 252 (1974 & rev. 2021).
http://www.leg.state.fl.us/STATUTES/index.cfm?App_mode=Display_Statute&URL=0200-0299/0252/0252ContentsIndex.html
- Florida Not For Profit Corporation Act, Fla. Stat. § 617 (1990).
http://www.leg.state.fl.us/STATUTES/index.cfm?App_mode=Display_Statute&URL=0600-0699/0617/0617ContentsIndex.html
- Florida Division of Emergency Management. (2016). *Hurricane Matthew after-action report/improvement plan*. <https://www.scribd.com/document/344911934/After-Action-Report-DR-4284-Hurricane-Matthew-FINAL>

- Florida Division of Emergency Management. (2017b). *Statewide hurricane full scale exercise*.
- Florida Division of Emergency Management. (2017a). *Hurricane Irma after-action report/improvement plan*.
- Florida Division of Emergency Management. (2019). *Hurricane Michael after-action report/improvement plan*.
<https://www.w5ddl.org/files/Hurricane%20Michael%20After%20Action%20Report%20-%20Florida%20SERT.pdf>
- Florida Volunteer Organizations Active in Disaster. (2019). *State Disaster Case Management Plan 2016*. <https://flvoad.communityos.org>
- Gazley, B., & Chao Guo. (2015). What do we know about nonprofit collaboration? A comprehensive systematic review of the literature. *Academy of Management Annual Meeting Proceedings, 2015*(1). <https://doi.org/10.1002/nml.21433>
- Getha-Taylor, H., Grayer, M. J., Kempf, R. J., & O’Leary, R. (2019). Collaborating in the absence of trust? What collaborative governance theory and practice can learn from the literatures of conflict resolution, psychology, and law. *The American Review of Public Administration, 49*(1), 51-64.
<https://doi.org/10.1177/0275074018773089>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 13*(1), 59–82.
<https://doi.org/10.1177/1525822X05279903>

- Hayter, C., & Nisar, M., (2018) Spurring vaccine development for the developing world: A collaborative governance perspective on product development partnerships, *International Journal of Public Administration*, 41(1), 46-58.
<https://doi.org/10.1080/01900692.2016.1247367>
- Henttonen, K., Lahikainen, K., & Jauhiainen, T. (2016). Governance mechanisms in multi-party nonprofit collaboration. *Public Organization Review*, 16(1), 1–16.
<http://dx.doi.org/10.1007/s11115-014-0293-8>
- Hrelja, R., Pettersson, F., Westerdahl, S. (n.d.). The qualities needed for a successful collaboration: A contribution to the conceptual understanding of collaboration for efficient public transport. *Sustainability*, 8(6). <https://doi.org/10.3390/su8060542>
- Jang, H. S., Feiock, R. C., & Saitgalina, M. (2016). Institutional collective action issues in nonprofit self-organized collaboration. *Administration & Society*, 48(2), 163–189. <https://doi.org/10.1177/0095399713513139>
- Johnson, B., Goerdel, H., Lovrich, N. Pierce, J. (2015) Social capital and emergency management planning: A test of community context effects on formal and informal collaboration. *The American Review of Public Administration*, 45(4), 476-493. <https://doi.org/10.1177/0275074013504127>
- Jung, K., Song, M., & Feiock, R., (2017) Isolated and broken bridges from inter-organizational emergency management networks: An institutional collective action perspective. *Urban Affairs Review*, 1-26.
<https://doi.org/10.1177/1078087417690257>

- Kapucu, N., (2007) Nonprofit response to catastrophic disasters, *Disaster Prevention and Management*, 16(4), 551-561. <http://dx.doi.org/10.1108/09653560710817039>
- Kapucu, N., & Garayev, V. (2016) Structure and network performance: Horizontal and vertical networks in emergency management. *Administration and Society*, 48(8), 931-961. <https://doi.org/10.1177/0095399714541270>
- Kapucu, N., & Hu, Q. (2016). Understanding multiplexity of collaborative emergency management networks. *The American Review of Public Administration*, 46(4), 399-417. <https://doi.org/10.1177/0275074014555645>
- Kapucu, N., & Sadiq, A. (2016). Disaster policies and governance: Promoting community resilience. *Politics and Governance*, 4(4), 58-61. <https://doi.org/10.17645/pag.v4i4.829>
- Kapucu, N., Yuladashev, F., & Feldheim, M. (2018). Nonprofit organizations in disaster response and management: A network analysis. *Journal of Economics and Financial Analysis*, (1), 69. <http://dx.doi.org/10.1991/jefa.v2i1.a13>
- Keast, R., & Mandell, M.P. (2011) *The collaborative push: Pushing beyond rhetoric and gaining evidence*. Paper presented at the 15th Annual Conference of the International Research Society for Public Management. Trinity College, Dublin, Ireland, 11-14 April, IRSPM. <https://doi.org/10.1007/s10997-012-9234-5>
- Kim, J. W., & Jung, K. (2016). Does voluntary organizations' preparedness matter in enhancing emergency management of county governments? *Lex Localis-Journal of Self Government*, 14(1), 1-17. <https://doi.org/10.4335/14.1.1-17%282016%29>

- Kislov, R., Hyde, P., & McDonald, R. (2017). New game, old rules? Mechanisms and consequences of legitimation in boundary spanning activities. *Organization Studies*, 38(10), 1421–1444. <https://doi.org/10.1177/0170840616679455>
- Koliba, C. J., Mills, R. M., & Zia, A. (2011). Accountability in governance networks: An assessment of public, private, and nonprofit emergency management practices following hurricane Katrina. *Public Administration Review*, 71(2), 210-220. <https://doi.org/10.1111/j.1540-6210.2011.02332.x>
- Law Insider. (n.d.). *All-hazards approach definition*. Retrieved January 11, 2023, from <https://www.lawinsider.com/dictionary/all-hazards-approach>
- MacManus, S., & Caruson, K. (2011). Emergency management: Gauging the extensiveness of public and private-sector collaboration at the local level. *Urban Affairs Review*, 47(2), 280-299. <https://doi.org/10.1177/1078087410362050>
- Majchrzak, A., Jarvenpaa, S. L., & Bagherzadeh, M. (2015). A review of inter-organizational collaboration dynamics. *Journal of Management*, 41(5), 1338–1360. <https://doi.org/10.1177/0149206314563399>
- Martin, E., Nolte, I., & Vitolo, E. (2016). The four C's of disaster partnering: Communication, cooperation, coordination and collaboration. *Disasters*, 40(4), 621–643. <https://doi.org/10.1111/disa.12173>
- Maxwell, J. A. (2009). Designing a qualitative study. In Bickman, L., & Rog, D. J. *The SAGE Handbook of Applied Social Research Methods* (pp. 214-253). SAGE Publications, Inc.

- Miller, D., Salkind, N., Creswell, J., & Maietta, R. (2003). The case study. *Handbook of Research Design & Social Measurement*, 162.
- Moran, M., Joyce, A., Barraket, J., MacKenzie, C., & Foenander, E. (2016). What does “collaboration” without government look like? The network qualities of an emerging partnership. *Australian Journal of Public Administration*, 75(3), 331–344. <https://doi.org/10.1111/1467-8500.12195>
- Moshtari, M., & Goncalves, P. (n.d.). Factors influencing inter-organizational collaboration within a disaster relief context. *Voluntas*, 28(4), 1673–1694. <https://doi.org/10.1007/s11266-016-9767-3>
- Murphy, M., Arenas, D., & Batista, J. M. (2015). Value creation in cross-Sector collaborations: The roles of experience and alignment. *Journal of Business Ethics*, 130(1), 145–162. <https://doi.org/10.1007/s1055014-2204-x>
- National Oceanic and Atmospheric Administration. (n.d.) *NOAA Historical Hurricane Tracks*. Retrieved January 12, 2023, from <https://oceanservice.noaa.gov/news/historical-hurricanes>
- National Oceanic and Atmospheric Administration. (2016). *National hurricane center tropical cyclone report: Hurricane Matthew*. https://www.nhc.noaa.gov/data/tcr/AL142016_Matthew.pdf
- National Oceanic and Atmospheric Administration. (2017). *National hurricane center tropical cyclone report: Hurricane Irma*. https://www.nhc.noaa.gov/data/tcr/AL112017_Irma.pdf

- National Research Council. (2011). *Building community disaster resilience through private-public collaboration*. The National Academies Press.
<https://doi.org/10.17226/13028>
- National Voluntary Organization Active in Disaster. (2012). Long Term Recovery Guide.
https://www.nvoad.org/all_resources/long-term-recovery-guide/
- National Voluntary Organizations Active in Disaster. (2019). National VOAD Strategic Plan 2019-23. <https://www.nvoad.org/wp-content/uploads/Strategic-Plan-2019-2023.pdf>
- National Voluntary Organization Active in Disaster. (2020). Disaster Response and Pandemic Resource. <https://www.nvoad.org/wp-content/uploads/Disaster-Response-and-Pandemic-Resource.pdf>
- Nohrstedt, D. (2016). Explaining mobilization and performance of collaborations in routine emergency management. *Administration & Society*, 48(2), 135–162.
<https://doi.org/10.1177/0095399712473983>
- Nolte, I. M., & Boenigk, S. (2013). A study of ad hoc network performance in disaster response. *Nonprofit and Voluntary Sector Quarterly*, 42(1), 148–173.
<https://doi.org/10.1177/0899764011434557>
- Nolte, I. M., Martin, E. C., Boenigk, S. (2012). Cross-sectoral coordination of disaster relief. *Public Management Review*, 14(6). <https://doi.org/10.1080/14719037.2011>
- O'Donovan, K. (2019). Disaster recovery service delivery: Toward a theory of simultaneous government and voluntary sector failures. *Administration & Society*, 51(1), 120–139. <https://doi.org/10.1177/0095399715622231>

- O'Leary, R., & Vij, N. (2012). Collaborative public management: Where have we been and where are we going? *The American Review of Public Administration*, 42(5), 507–522. <https://doi.org/10.1177/0275074012445780>
- Poocharoen, O., & Ting, B. (n.d.). Collaboration, co-production, networks: Convergence of theories. *Public Management Review*, 17(4), 587–614. <https://doi.org/10.1080/14719037.2013.866479>
- Porter, J. J., & Birdi, K. (n.d.). 22 Reasons why collaborations fail: Lessons from water innovation research. *Environmental Science & Policy*, 89, 100–108. <https://doi.org/10.1016/j.envsci.2018.07.004>
- Pranab, P., (2018) Making innovations work: local government–NGO partnership and collaborative governance in rural Bangladesh, *Development in Practice*, 28 (1) 125-137. <https://doi.org/10.1080/09614524.2018.1401588>
- Prentice, C. R., & Brudney, J. L. (2016). Definitions do make a difference: county managers and their conceptions of collaboration. *Human Services Organizations Management Leadership & Governance*, 40(3), 193–207. <http://dx.doi.org/10.1080/23303131.2015.1117554>
- Prentice, C. R., Imperial, M. T., & Brudney, J. L. (2019). Conceptualizing the collaborative toolbox: A dimensional approach to collaboration. *The American Review of Public Administration*, 49(7), 792–809. <https://doi.org/10.1177/0275074019849123>

- Putansu, S. R. (2015). Cross agency priority goals in the U.S. government: Can directed collaboration be a stepping stone toward politic-centered performance? *Policy and Society*, 34(1), 25–35. <https://doi.org/10.1016/j.polsoc.2015.03.003>
- Quarshie, A. M., & Leuschner, R. (2018). Cross-sector social interactions and systemic change In disaster response: A qualitative study. *Journal of Business Ethics*, 150(2), 357–384. <https://doi.org/10.1007/s10551-018-3860-z>
- Randolph, R. V. d. G. (2016). A multilevel study of structural resilience in interfirm collaboration: A network governance approach. *Management Decision*, 54(1), 248-266. <http://dx.doi.org/10.1108/MD-06-2015-0247>
- Rice, R., (2018). When hierarchy becomes collaborative: Collaboration as sense making frame in high reliability organizing, *Corporate Communications: An International Journal*, 23(4), 599-613. <https://doi.org/10.1108/CCIJ-04-2017-0032>
- Robinson, S. E., & Gaddis, B. S. (2012). Seeing past parallel play: Survey measures of collaboration in disaster situations. *Policy Studies Journal*, (2), 256. <https://doi.org/10.1111/j.1541-0072.2012.00452.x>
- Robinson, S., Murphy, H., & Bies, A. (2014). Structured to partner: School district collaboration with nonprofit organizations in disaster response. *Risk, Hazards & Crisis in Public Policy*, 5(1), 77–95. <https://doi.org/10.1002/rhc3.12047>
- Rouhi, N., Gorji, H., & Maleki, M. (2019). Nongovernmental organizations coordination models in natural hazards: A systematic review. *Journal of Education and Health Promotion*, 8(1), 44. https://doi.org/10.4103/jehp.jehp_201_18

- Rye, T., & Isaksson, K. (n.d.). Workshop 4 report: Criteria for successful collaboration. *Research in Transportation Economics*, 69, 344–348. <https://doi.org/10.1016/j.retrec.2018.08.004>
- Salman Sawalha, I. H. (2014). Collaboration in crisis and emergency management: Identifying the gaps in the case of storm “Alexa.” *Journal of Business Continuity & Emergency Planning*, 7(4), 312–323.
- Selden, S. C., Sowa, J. E., & Sandfort, J. (2006). The impact of nonprofit collaboration in early child care and education on management and program outcomes. *Public Administration Review*, 66(3), 412–425. <https://doi.org/10.1111/j.1540-6210.2006.00598.x>
- Shilbury, D., O, B. I., & Ferkins, L. (2016). Towards a research agenda in collaborative sport governance. *Sport Management Review*, 19(5), 449–479. <https://doi.org/10.1016/j.smr.2016.04.004>
- Simo, G., & Bies, A. L. (2007). The role of nonprofits in disaster response: An expanded model of cross-sector collaboration. *Public Administration Review*, 67(125-142). <https://doi.org/10.1111/j.1540-6210.2007.00821.x>
- Simsa, R., Rameder, P., Aghamanoukjan, A., & Totter, M. (2019). Spontaneous volunteering in social crises: Self-organization and coordination. *Nonprofit and Voluntary Sector Quarterly*, 48 (2_suppl), 103S-122S. <https://doi.org/10.1177/0899764018785472>

- Silvia, C. (2018). Evaluating collaboration: The solution to one problem often causes another. *Public Administration Review*, 78(3), 472–478.
<https://doi.org/10.1111/puar.12888>
- Sledge, D., & Thomas, H. F. (2019). From disaster response to community recovery: Nongovernmental entities, government, and public health. *American Journal of Public Health*, 109 (3), 437–444. <https://doi.org/10.2105/AJPH.2018.304895>
- Smith, S. L., & Grove, C. J. (2017). Bittersweet and paradoxical *Nonprofit Management & Leadership*, 27 (3), 353–369. <https://doi.org/10.1002/nml.21250>
- Thomson, A. M., & Perry, J. L. (2006). Collaboration processes: Inside the black box. *Public Administration Review*, 66, 20–32. <https://doi.org/10.1111/j.1540-6210.2006.00663.x>
- Toma, J. (2011). Approaching rigor in applied qualitative research. In Conrad, C., & Serlin, C. *The SAGE handbook for research in education: Pursuing Ideas as the Keystone of Exemplary Inquiry* (pp. 263-280). Thousand Oaks, CA: SAGE Publications, Inc. <https://doi.org/10.4135/9781483351377>
- Turner, D., III (2010). Qualitative interview design: A practical guide for novice investigators. *The Qualitative Report*, 15(3), 754-760.
<https://doi.org/10.46743/2160-3715/2010.1178>
- U.S. Governmental Accountability Office. 2020. *FEMA and the American Red Cross Need to Insure Key Mass Care Organizations are Included in Mass Care and Planning*. <https://www.gao.gov/products/gao-19-526>

- Vangen, S., Hayes, J. P., & Cornforth, C. (2015). Governing cross-sector, inter-organizational collaborations. *Public Management Review*, *17*(9), 1237. <https://doi.org/10.1080/14719037.2014.903658>
- Ward, K. D., Varda, D. M., Epstein, D., & Lane, B. (2018). Institutional factors and processes in interagency collaboration: The case of FEMA corps. *The American Review of Public Administration*, *48*(8), 852–871. <https://doi.org/10.1177/0275074017745354>
- Wu, W. N., & Chang, S. M., (2018). Collaboration mechanisms of Taiwan nonprofit organizations in disaster relief efforts: Drawing lessons from the Wenchuan earthquake and typhoon Morakot. *Sustainability*, *(11)*, 4328. <https://doi.org/10.3390/su1011432>
- Western Australian Network of Alcohol and Drug Agencies. (2017). Western Australia Network of Alcohol and Drug Agencies Annual Report 2017-19. <http://www.wanada.org.au>
- Yin, R. K. (2011). *Qualitative research from start to finish*. The Guilford Press.
- Zhelyazkov, P. I. (2018). Interactions and interests: Collaboration outcomes, competitive concerns, and the limits to triadic closure. *Administrative Science Quarterly*, *63*(1), 210–247. <https://doi.org/10.1177/0001839217703935>

Appendix A: List of ESF-15 Voluntary Organizations

1. American Red Cross
2. Billy Graham Evangelistic Association
3. Catholic Charities of Florida, Inc.
4. Christian Contractor's Association, Inc.
5. Christian Disaster Response
6. Church of Jesus Christ of Latter-Day Saints
7. Church of Scientology Disaster Relief Team
8. Church World Service
9. Convoy of Hope
10. Corporation for National and Community Service
11. Cross Roads Alliance
12. Episcopal Diocese of Central Gulf Coast
13. Episcopal Diocese of Florida
14. Episcopal Diocese of Southeast Florida
15. Florida Alliance of Information and Renewal Services
16. Florida Association of Food Banks
17. Florida Association for Volunteer Resource Management
18. Florida Baptist Convention
19. Florida Conference United Church of Christ
20. Florida Conference of the United Methodist Church
21. Florida Department of Elder Affairs

22. Florida Goodwill Association
23. Florida Presbyterian Disaster Assistance Network
24. Florida VOAD
25. Florida Knights Hospitallers of the Order of St. John
26. Lutheran Services of Florida
27. Mennonite Disaster Service
28. Operation Blessing International

Appendix B: ESF-15 Collaboration Questionnaire

1. Did your organization participate in the ESF-15 response efforts to Hurricane(s) Matthew, Irma, or Michael?
2. To what extent did collaboration occur between ESF-15 voluntary organizations occur during Hurricane(s) Matthew, Irma, or Michael?
3. How did voluntary organizations within the ESF-15 function communicate during response and recovery efforts to hurricane(s) Matthew, Irma, or Michael?
4. What impact did the following have on interaction between ESF-15 organizations during response efforts to Matthew, Irma, or Michael:
 - A. During your response did you notice that your organization shared the same interests and values with other ESF-15 organizations? If so, please elaborate.
 - B. During response efforts was there a clear definition of roles purposes and objectives between ESF-15 organizations? If so, please elaborate.
 - C. During response efforts were issues, roles, and expectations deliberated between ESF-15 organizations? If so, please elaborate.
 - D. How did ESF-15 organizations determine how to arrive at decisions and solutions to problems during response efforts?
5. Please describe the role played by the following during ESF 15 response efforts to hurricane(s) Matthew, Irma, or Michael:

- A. Mutual trust?
 - B. Understanding the capabilities, missions, and limits of other ESF-15 organizations?
 - C. Commitment towards working to achieve common goals?
 - D. Crossing organizational lines in order to accomplish a common purpose?
6. How important were the following to collaboration during response efforts to Matthew, Irma, or Michael:
- A. Procedural and institutional arrangements to manage response efforts?
 - B. Established leadership roles within the ESF-15 group?
 - C. Predetermined means of arriving at solutions facing ESF-15 organizations?
 - D. Information and resource sharing between ESF-15 organizations?