COORDINATING FOR CRISIS, BUILDING RESILIENCE: INSIGHTS FROM SURVEYS OF GULF COUNTY EMERGENCY MANAGERS

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Abstract

In the aftermath of Hurricane Katrina, resilience emerged as a guiding principle to recast the federal emergency management that failed on all levels. While the appeal is clear – resilient communities are able to 'bounce back' from disasters – strategies for developing resilience, particularly those addressing policy and management, have not fully emerged. How can local administrations build disaster resilience? This study builds on theory of resilience as an adaptive process, one fundamentally characterized by coordination of impromptu action to create locally-driven solutions to post-disaster challenges. Ratings of post-disaster coordination by Gulf Coast emergency managers taken from original surveys are examined in an effort to identify the administrative factors that are associated with good coordination. The findings indicate that emergency manager years of experience, emergency manager college education, the frequency to which emergency managers work on collaboration with public and private partners, and local government spending on emergency services are positively correlated with ratings of coordination.

Introduction

Ten years ago the Gulf Coast of United States was hit by Hurricane Katrina. A category 3 storm with a radius of approximately 30 nautical miles, Katrina became the most costly disaster in U.S. history (NOAA 2005 and 2011). Approximately 90,000 square miles across the states of Louisiana, Mississippi, and Alabama were affected, causing more than $125 billion in damages. An estimated 1,800 lives were lost, and more than one million people were displaced due to the storm. Beyond the tolls of property damage, lives lost, and family structures altered, Katrina triggered a loss of confidence in our federal emergency management system.

In the report 'Hurricane Katrina: A Nation Still Unprepared' the bipartisan Senate committee on Homeland Security and Government Affairs concluded that the human suffering following the storm was a result of 'the failure of government at all levels to plan, prepare for, and respond aggressively to the storm'(US Senate 2006). Multiple factors were identified as a cause of this failure, including unheeded warnings, poor decision-making by government officials, response system breakdown, and lack of effective leadership. The Federal Emergency Management Agency's (FEMA) 2006 review of state and urban emergency plans echoed these conclusions, pointing to needed improvements in evacuation, command structure, resource management, and attention to special needs populations (Gall and Cutter 2007, p. 193). Similar points have been made by academic studies focused on the shortcomings of the administrative response to Hurricane Katrina (e.g. Comfort, et al. 2010; Cigler 2007; Col 2007; Comfort 2007; Garnett and Kouzmin 2007; Lester and Krejci 2007; Van Heerden 2007; Waugh 2007).

Congress responded to this by passing the Post-Katrina Emergency Management Reform Act of 2006. This legislation effectively restored the authority stripped from FEMA resultant from the creation of the Department of Homeland Security (DHS) following the terrorist attacks of 9/11 (Congressional Research Service 2013). The act reestablished FEMA's mission to 'lead and support efforts to reduce the loss of life and property and protect the nation from all hazards' (Congressional Research Service 2013, p. 7). In addition to these organizational changes within DHS, Hurricane Katrina spurred a fundamental shift in emergency management focus from protecting critical infrastructures to the building of resilient communities (de Bruijne, Boin, and van Eeten 2010, p. 28).

Resilience formally became a part of the DHS lexicon in January 2006 with the recommendations of the Homeland Security Advisory Council's Critical Infrastructure Task Force Report (DHS Community Resilience Task Force Recommendations 2011). Protection, the task force asserted, is a 'brittle strategy' when used alone; resilience, on the other hand, is dynamic, flexible, and can 'maintain its function and structure in the face of internal and external change' (DHS Report of the Critical Infrastructure Task

Force 2006). While resilience was first applied to infrastructure, it quickly became touted as a 'bottom-up' strategy for all aspects of emergency management that can empower local solutions to local challenges. The focus on resiliency, therefore, became an attractive frame, and community resilience has been widely adopted as a guiding principle for emergency management by the federal government.

Despite the appeal of resilience as a strategy, scholars and policy practitioners alike struggle with identifying what resilience is and how it may be developed, particularly on the local level where it is purported to make the most change. Most conceptualizations of resilience within hazards and disaster management literature highlight capacities, describing resilience as the general ability to 'bounce back'; the ability of communities to survive external stress and disturbance (Adger 2000); or the ability to prevent, withstand, and recover from loss (Berke and Campanella 2006; Rose 2006). But these capacities can be – and are most likely to be – overwhelmed by disaster events (Boin, Comfort and Demchak 2010, p. 11). Resilience, therefore, must be conceptualized – and practiced – as more than the ability to return to 'normal.' Ultimately, resilience develops where impromptu actions are effectively coordinated to meet the needs of the post-disaster environment (Boin, Comfort, and Demchak 2010; Ross 2014). Boin and 't Hart contend that "it is not formal structures but the quality of communication, coordination, and collaboration within, across, and beyond emergency services that matter most"(2010, p. 367). Coordination, therefore, is in theory a cornerstone of building resilient, sustainable response and recovery solutions to the challenges presented by a disaster event.

Survey of Emergency Managers

What are the correlates of effective coordination among local leadership and their partners in disaster response and recovery? To answer this, original survey data collected in 2011 and 2012 from interviews with county emergency managers across the Gulf Coast in the states of Alabama, Florida, Louisiana, Mississippi, and Texas is analyzed (Ross 2014). Counties across this five state region within 25 miles of the Gulf of Mexico

were targeted for the survey. Fifty-five counties responded; due to missing data, the following 52 counties are included in the analysis.[1]

Emergency managers were asked to rate coordination and collaboration with the following groups: average citizens and citizen groups, private partners (for example grocery stores and other key industries, nonprofit partners (for example faith-based or volunteer groups), municipal elected officials (for example the mayor and council members), county elected officials (for example county commissioners), neighboring county emergency management directors, state emergency management officials, and federal emergency management officials. Possible responses included poor, adequate, good, and excellent. The distribution of responses is shown in Figure 1.

[1] This includes: Alabama – Baldwin County; Florida – Bay, Calhoun, Charlotte, Citrus, Franklin, Gulf, Lee, Leon, Liberty, Manatee, Monroe, Okaloosa, Pasco, Santa Rosa, Sarasota, Taylor, Walton, and Washington Counties; Louisiana – Acadia, Ascension, Assumption, Cameron, Iberia, Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. Mary, St. Tammany, Tangipahoa, Terrebone, and Washington Parishes; Mississippi – Hancock, Harrison, and Jackson Counties; Texas – Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kenedy, Kleberg, Matagorda, Orange, Refugio, and San Patricio Counties.

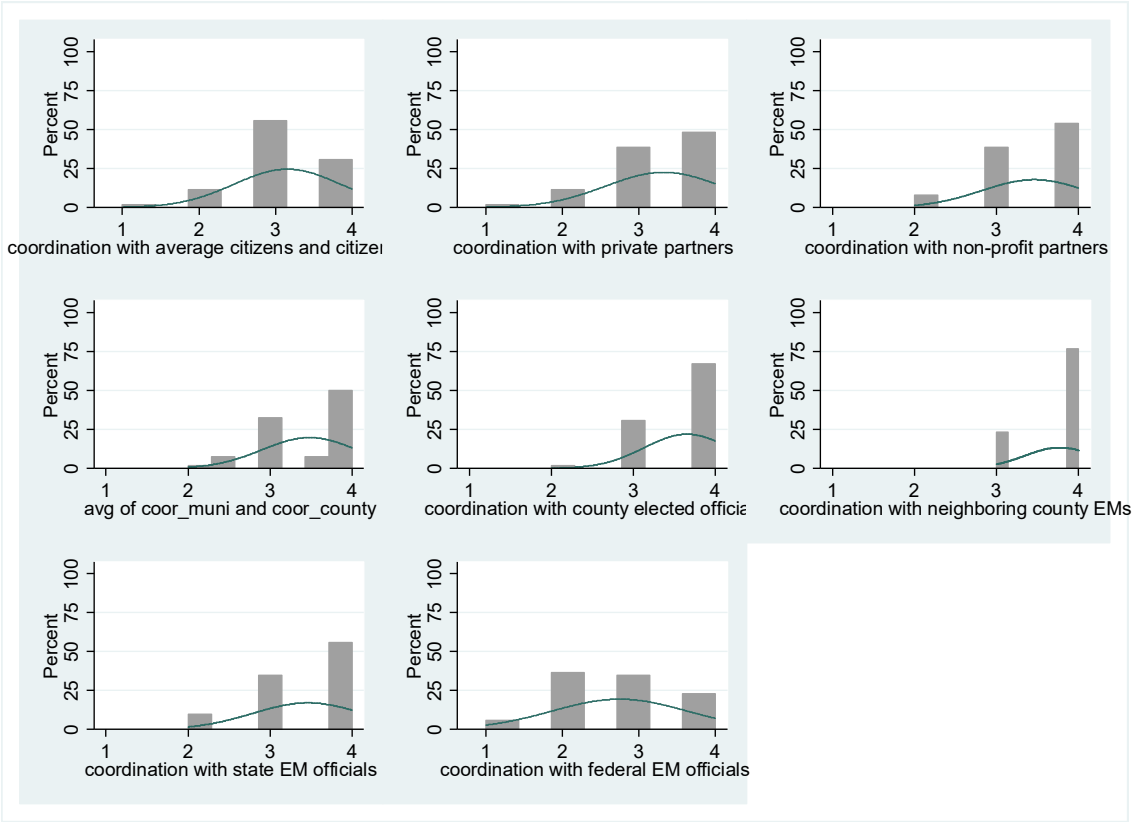

Figure 1: Ratings of Coordination

Analysis

To assess the factors that may contribute to higher coordination ratings, six independent variables are regressed on the coordination ratings:

1. Frequency emergency managers reported "work on collaboration with public and private partners" - possible responses included: almost never (coded 1), once in a while (yearly), sometimes (monthly or quarterly), often (weekly), very often (almost daily). Higher values indicate greater frequency of collaboration;
2. Perception of the emergency manager of the position as one of coordination - What would you say is the primary role of emergency managers when dealing with disasters?;[2]

[2] Responses that explicitly used the word "coordination" or implied it through phrasing that characterized the role of the emergency manager as one of "teamwork" or "facilitator," were considered to indicator coordinator role. Those responses that implied command-and-control, such as "take control of all activities

3. Years of experience in the emergency management field;
4. College education of the emergency manager;
5. Percent of local government spending on emergency services - less than 10% of local government spending on first response (coded 1), 10-14.9% (coded 2), 15-19.9% (coded 3), 20-24.9% (coded 4), 25-29.9% (coded 5), 30-34.9% (coded 6), 35-39.9% (coded 7), 40-44.9% (coded 8), 45-49.9% (coded 9), and more than 50% (coded 10); and
6. The number of staff in the emergency management office.

The results of the ordered logit analysis indicate that years of experience, college education, working on collaboration with public and private partners, and local government spending on emergency services are positively correlated with ratings of coordination. The significance of the six factors across each model is shown in Table 1.

Table 1: Statistically Significant Factors

	Citizens	Private Partners	Non-Profits	Local Govt.	County Govt.	Neighbor EM	State EM	Federal EM
Frequency of collaboration	---	---	---	*	---	---	---	---
Coordination role	---	---	---	---	---	---	---	---
EM years in field	---	*	---	---	---	---	---	---
EM college education	*	---	---	---	---	---	---	---
Local govt. spending on EM services	---	---	---	---	---	---	---	*
Number of EM staff	---	---	---	---	---	---	---	---

*Note: * indicates statistical significance at p<.10 level; --- indicates no statistical significance*

College education is statistically significant for the citizen model. Predicted probabilities indicate that a college educated emergency manager has a 44% likelihood of saying coordination with citizens in excellent while an emergency manager with less than a college degree has a 17% likelihood of the same. Years of experience in the emergency management field is statistically significant for the private partner model. Emergency

from response to recovery" and "evacuate – clean-up – return residents to their homes", were not considered coordination.

managers with mean years of experience – 19 – have a 48% likelihood of saying coordination with private partners has been excellent in the past while emergency managers with only 3 years of experience have a 33% likelihood of the same. Frequency of working on collaboration with public and private partners affects coordination ratings of local governments. Emergency managers that report working almost daily on such collaboration have a 65% likelihood of saying coordination with local elected officials is excellent while an emergency manager that works on collaboration only once a year has a 17% likelihood of saying the same. Local government spending on emergency services is statistically significant in the federal emergency management model. Emergency managers in county that spend the mean percentage on emergency services – 20 to 24.9% - have a 23% likelihood of saying coordination with federal emergency management has been excellent in past disasters while emergency managers in counties with less than 10% spending on emergency services have a 7% likelihood of saying the same.

Conclusion

The findings of this study indicate that ratings of coordination with various groups involved in disaster management, response, and recovery is varied. Emergency managers with year of experience in the field and a college education tend to rate groups on the local level more favorably. Emergency managers that work frequently on collaboration with public and private partners have a higher likelihood of rating collaboration with local government officials as excellent. Additionally, local government spending on emergency services positively influences ratings of coordination with federal emergency management. In all, the findings indicate the connections, knowledge, and resources emergency managers have positively impact their coordination with key groups in disaster management. Future studies are needed to tease out the causation of these relationships.

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