Defending Against the Next Domestic Crisis: A New U.S. Military Decision-Making Dilemma

Lt. Colonel Ryan J. Scott
NC State University
Disaster Declarations By Year

(Department of Homeland Security, 2019)
The Administrative Challenge

Federal Government

State Government

Disaster Response
The Administrative Challenge

Federal Government

DOD as a Resource to Bridge The Gap

State Government

Disaster Response
Purpose

This research attempts to develop a way of understanding the interaction of the DOD and government agencies as different elements of disaster response networks.

**Theme 4:** What is the best use of the Army to help defend the U.S. homeland and North America?

**National Defense Strategy Linkages:**
Build a More Lethal Force and Strengthen Alliances and Attract New Partners
Terminology

**Crisis**: a threat to core values, safety of people, or the functioning of critical infrastructures. (Rosenthal et al. 1989; Boin et al. 2005)

**Disaster**: threat has materialized and caused significant damage. (Boin and Bynander, 2015)

**Disaster Response Network**: structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement (O’Toole 1997b, 45)
Research Question

1. How does the cost for disaster response networks change when the DOD supports?

2. What is the relationship between the size of disaster response networks and the presence of DOD?

3. Does the type of disaster influences the cost associated with DOD support in disaster response networks?
Dominant Theories

• Resource Dependency Theory (RDT)
  • Influencing external relationships
  • Interdependence coupled – uncertainty
  • Interorganizational power dynamic

• Transaction Cost Theory
  • Org Structure – Minimize costs
  • “Make – Buy - Hybrid” dilemma

• Network Governance
  • Three Streams of Networks: Policy, Governance, Collaborative
  • Requisite capacities of Networks
  • Emergency management as collaborative
Gap in Literature:

• Conceptualizing the DOD as the resource can help explain the intergovernmental interdependence in disaster response networks.
What does cost tell us?
Hypotheses

$H1$: Cost associated with using the DOD is cheaper compared to other agencies in disaster response networks.

$H2$: There is a positive linear relationship between the size of disaster response networks and the presence of DOD.

$H3$: The type of disaster positively influences the cost associated with DOD support in disaster response networks.
## Why is this important?

Table 1. *Federal Dollars Obligated to Disaster Support, 2014-2018*

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost Obligated By Year</th>
<th>Cost Obligated for DOD By Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>$26,442,250.24</td>
<td>$3,776,384.59</td>
</tr>
<tr>
<td>2015</td>
<td>$69,107,670.66</td>
<td>$7,479,731.63</td>
</tr>
<tr>
<td>2016</td>
<td>$44,414,882.05</td>
<td>$121,452.30</td>
</tr>
<tr>
<td>2017</td>
<td>$1,141,945,711.09</td>
<td>$32,663,522.89</td>
</tr>
<tr>
<td>2018</td>
<td>$1,294,438,585.28</td>
<td>$36,724,846.21</td>
</tr>
</tbody>
</table>

(Department of Homeland Security, 2018)
Federal Dollars Obligated to Disaster Support, 2014-2018
Data and Method

- FEMA Daily Mission Assignments reported from 2014 to 2018
- DoD Personnel, Workforce Reports & Publications and US Census Bureau data from 2014 to 2018
- Sample Size: N= 1843 (days reported)
- Three models used to estimate causal relationships
- Unit of analysis is cost to agency

Daily Mission Assignment: Federal funds issued and obligated in order to make resources available to address estimated immediate mission-critical needs. (https://www.fema.gov/media-library/assets/documents/101353)
Results

\( H1: \) (Not Supported) Disaster support networks are $904,494.3 less in costs obligated (\( P > .518 \)) when the DOD participate, controlling for size of military, forces overseas, and administration.

\( H2: \) (Not Supported) There is no relationship between the number of agencies and the likelihood that the DOD will support.

\( H3: \) (Not Supported) On average the DOD is more like to support fires, storms and hurricanes than any other disaster type.
Number of Declarations from 2014-2018

- Volcano: 2
- Typhoon: 4
- Tsunami: 0
- Toxic Substances: 1
- Tornado: 10
- Terrorist: 1
- Snow: 14
- Severe Storm(s): 140
- Severe Ice Storm: 13
- Other: 2
- Mud/Landslide: 5
- Hurricane: 53
- Human Cause: 0
- Freezing: 0
- Flood: 84
- Fishing Losses: 0
- Fire: 193
- Earthquake: 1
- Drought: 0
- Dam/Levee Break: 1
- Coastal Storm: 5
- Chemical: 1

https://www.fema.gov/media-library/assets/documents/101353
DOD Supported Missions Supported from 2014-2018

- Wildfire: 2%
- Volcanic Eruption: 21%
- Typhoon: 27%
- Tropical Storm: 48%
- Tornado: 0%
- Sever Storm (Winter): 2%
- Sever Storm (Rain): 2%
- Potential Failure of the Emergency...: 0%
- Other: 0%
- Hurricanes: 9%
- Flooding and Mudslides: 0%
- Flooding: 3%
- Explosion: 0%
- Disaster Surge: 17%
- Chemical Spill: 10%

[Link to PDF: https://www.fema.gov/media-library/assets/documents/101353]
Conclusion

• The DOD will continue to have a role in disaster response.

• If we can understand the DOD’s role in disaster response networks using RDT:
  – Provide clear options to public managers
  – Understand how to integrate the DOD
  – Formation of formal relationships to ensure FEMA achieves its desired mission objectives
Thank You

Ryan J. Scott, LTC
Advanced Strategic Planning and Policy Program Fellow
North Carolina State University
rjscott@ncsu.edu
301-575-7608
• Disaster_Cost = β + β_1 DOD_Repi + β_2 DisasterType_i + β_3 (DOD_Rep x DisasterType)_i
Future Research

Assessing the efficacy of the Army’s role in disaster and humanitarian assistance and the degree to which lessons are drawn across events.

- Knowledge Transfer
- Organizational Learning
Theoretical Crosswalk

Resources (DOD)

Success (Survival)

FEMA

Power (Capable Military)

(Pfeffer 1987; Pfeffer and Salancik 1978)
Method

• Ordinary Least Square Regression to estimate mean cost obligated
  – series of models, starting with the total number of agencies in the disaster response network and the type of disaster.
Theoretical Framework

Resource Dependence Theory:

1. Intercorporate relations and society are organizations
2. Network of Interdependencies
3. Survival and continued Success are Uncertain
4. Manage External Interdependencies
5. Dependence Produces Power

(Pfeffer 1987; Pfeffer and Salancik 1978)
## Epistemological Crosswalk Derived from Dominant Theories

<table>
<thead>
<tr>
<th>Theory</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Dependence</strong></td>
<td>• Influencing external relationships</td>
</tr>
<tr>
<td></td>
<td>• Interdependence coupled – uncertainty</td>
</tr>
<tr>
<td></td>
<td>• Interorganizational power dynamic</td>
</tr>
<tr>
<td><strong>Transaction Cost Economics</strong></td>
<td>• Org Structure – Minimize costs</td>
</tr>
<tr>
<td></td>
<td>• “Make – Buy - Hybrid” dilemma</td>
</tr>
<tr>
<td><strong>Network Governance</strong></td>
<td>• Three Streams of Networks:</td>
</tr>
<tr>
<td></td>
<td>• Policy Networks</td>
</tr>
<tr>
<td></td>
<td>• Governance Networks</td>
</tr>
<tr>
<td></td>
<td>• Collaborative Networks</td>
</tr>
<tr>
<td></td>
<td>• Requisite capacities of Networks</td>
</tr>
<tr>
<td></td>
<td>• Emergency management as collaborative</td>
</tr>
</tbody>
</table>
Theoretical Framework

• Three Streams of Networks:
  – Policy Networks
  – Governance Networks
  – Collaborative Networks

• Network Administrative Organization
  – Disseminator of funds
  – Administrator
  – Organizer

(Lee et al. 2018) (Provan 2001)
Theoretical Framework

- Every Public organization is networked

- Four primary criteria for evaluating networks:
  1. Client outcomes
  2. Legitimacy
  3. Resource acquisition
  4. Cost

(O’Toole 2014) (Provan al. 2001)
Backup