

Intergovernmental Interaction in Threat Preparedness and Response-- California's Approach

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Abstract

This paper examines how four factors--personal interaction, leadership, communication, and legal structures--affect emergency management in California. The research is grounded in three literature streams: traditional management theory, organizational learning theory, and network theory, including collaboration. Traditional management structures are necessary, even though the shape and design of those relationships are increasingly less formal. As a result of this study, the interactions, regardless of how they are created, are essential for effective outcomes in emergency preparedness and response. This study ties into the current operation of emergency preparedness and adds to the literature on organizational theory and management and the newly evolving focus on homeland security/emergency management, particularly at the state, regional, and local levels.

Introduction

Two incidents have forced the United States to take significant steps to prepare for large-scale disasters: the attacks on September 11, 2001, and the devastation that resulted from Hurricane Katrina on August 29, 2005. Emergency managers respond under the mantra “all emergencies are local.” While this is a practically useful tag line, it is through the planning and preparation efforts at all levels of government that an emergency response system can work efficiently and effectively. To date, most of the post-2001 published literature has focused on *national* preparedness and response. This study focuses on the state level. California was selected because of its national importance. In particular, strong similarities are seen between the newly created National Incident Management System (NIMS) and California’s well-established Standardized Emergency Management System (SEMS), suggesting that the national emergency management guidelines were influenced by California’s approach.

To understand California’s emergency management system, two research questions were investigated:

1. How do personal interactions, official communications, legal policies, and leadership affect emergency preparedness and response within the California jurisdictions studied?
2. What is the relationship between frequency of interaction and effectiveness?

To understand the importance of these questions, a fundamental understanding of emergency management must be explored. Emergency preparedness and response within the United States entail huge challenges. Besides the most obvious of those, William Waugh and Gregory Streib point out a more significant concern in responding to disaster occurrences: “Modern emergency management presents a paradox. On one hand, emergency response

requires meticulous organization and planning, but on the other hand, it is spontaneous” (Waugh and Streib, 2006, 132).

Because emergency preparedness and response activities are largely governmental responsibilities, traditional management techniques are used in part to define organizational structures. Rule of law is basic. Yet, these approaches, while important to responsible governance, can be too cumbersome to meet the rapid, changing and uncertain conditions that large-scale emergencies present. To deal successfully with these challenges, more flexible governmental organizations and processes need to be present. The question is not *if* it is possible to have this type of governmental framework, but *how* arrangements of this magnitude can operate effectively, efficiently, and economically. The “how” is answered through intergovernmental interaction utilizing the best of traditional management structures and network theory after organizational learning takes place.

This paper briefly illustrates the shift in California emergency management approaches and conceptual frameworks before analyzing the impact of personal interactions, communication, legal structures, and leadership on emergency preparedness and response.

Contextual Framework

California’s size, national economic importance, and experience with preparing for and responding to multi-jurisdictional emergencies contribute breadth and depth to this research. Six counties within the state’s three emergency management regions (Coastal, Inland, and Southern), their encompassed cities, and relevant special districts are investigated. The focus is how the regional emergency operation centers, the operational areas, and the field operations work together both to prepare for and to respond to emergencies.

California is a leader in emergency management trends because of its necessity to respond to natural disasters, especially earthquakes, fires, and floods that cross jurisdictional

lines and have impacted many communities. As a result, the extent and characteristics of flexibility and rigidity of the response system have varied greatly. Prior to the 1970s, a state-wide emergency response system was largely unorganized; instead it relied on independent local preparedness and response. This was consistent with the administrative approach at the time: to empower local jurisdictions and to maximize efficiency in governmental processes. Despite Joint Powers Agreements (JPA) regionally, the local approach lacked coordinated efforts to respond to larger-scale, multi-jurisdictional incidents. Seeing the positive effects of expanding collaborative action in fighting wildfires, California created the Incident Command System (ICS) in the mid-1970s. This is a clear example of organizational learning. The combination of valid information, open communication and internal, personal commitment led to making strategic changes that benefited the entire emergency management system.

ICS is a highly flexible approach for responding to emergencies. When an incident occurs, ICS has established protocols to identify who is in charge (unity of command) and a consolidated incident action plan. Especially in regard to the unity of command, this paramilitary approach does a number of things. First, because an incident commander is identified early in the field, decisions can be made quickly and a direct response can occur. There is no question about who calls the shots and who is responsible for the collective actions. Second, as a critical component of effective response, decisions can be made that directly relate to the incident, given the environment in which it occurs and the resources immediately available. In order for ICS to work, some departments must be able to yield decision-making authorities and resources to work for the greater collective good. This approach is consistent with traditional management practices where administrator's actions are deliberate and strategic to increase effectiveness of their efforts.

In the early 1990s, after a number of earthquakes and urban fires, most notably the Oakland Ridge Fire, California reorganized its emergency management procedures under the California Standardized Emergency Management Systems (SEMS). While originally building on the successes of ICS, SEMS sought to create a common language, structure and procedures when responding to an incident. According to the 2006 SEMS Guidelines, the ICS, which it incorporates, has five functions:

1. Command--“direct, order, or control of resources”
2. Operations--“coordinated tactical response”
3. Planning/Intelligence--“collection, evaluation, and documentation of information”
4. Logistics--“facilities, services, personnel, equipment, and materials”
5. Finance/Administration--“financial and cost analysis” of the incident (SEMS, 2006, 4-9)

This approach has three features: a modular organization of ICS, Incident Action Plans, and Unified Command. Of these features, the most distinctive is the unified command structure as it differs from the unity of command previously practiced in ICS.

SEMS seeks to create flexible and rapidly-responding systems needed for responsible handling of incidents. Unclear, however, is the relationship between the concepts of “unity of command” and “unified command.” As described in the 2006 SEMS Guidelines, “Unified Command is a procedure used at incidents, which allows all agencies with geographical, legal, or functional responsibilities to establish a common set of incident objectives and strategies, and a single Incident Action Plan” (2006, 18).

While unity of command has one person clearly identified to make in-the-field decisions throughout the incident, unified command turns response into a group process. As a possible attempt to reduce the silos created in the former ICS organizational structure and to create greater collaboration, particularly among the fire departments and law enforcement, a unified

command approach is now used to bring all parties to the table where they may share decision-making authority. Current literature, which is explained in greater detail later in this paper, supports such efforts to build collaboration, network interoperability, and governance structures. As an applied recent example, the response efforts during the Angora Fire at Lake Tahoe in 2007 had components of both “unity of command” with the local forest Fire Chief making the necessary initial decisions to control the fire, and a “unified command” approach to coordinate combined efforts to avoid loss of life and minimize property damage.

The Angora Fire began on June 24, 2007, and was 100% contained by July 10, 2007. While the official cause is under investigation, it is suspected that day hikers caused the fire. It burned 3,100 acres and destroyed 329 residential, commercial, and other structures. The fire ranked 14th of California’s largest wildfires by structures destroyed (CAL FIRE, July 3, 2007).

Kit Bailey, U.S. Forest Service Forest Fire Chief for the Lake Tahoe Basin, was the initial incident commander (Ferchland, 2007). At this time, his actions cannot be analyzed from official reports. However, from newspaper accounts, his initial actions (directing resources to where they were needed without a formal group process) seem more consistent with “unity of command” rather than “unified command.” This is consistent with the current SEMS guidelines where one commander is initially identified with a unified command structure being established later.

According to the California Department of Forestry and Fire Protection (CAL FIRE), the unified command system was utilized with cooperating agencies including: “all fire agencies within the Tahoe Basin, United States Forest Service, CAL FIRE, California Highway Patrol, South Lake Tahoe Police Department, El Dorado County Sheriffs Office, Red Cross, and Civil Air Patrol” (CAL FIRE, July 3, 2007). It is unclear how each of these partners affected the

immediate decisions made in the field as a collective body, but their objectives to save lives and minimize property damage were successful.

Unified command, which is the most current approach to emergency management within the State, reportedly has multiple advantages, including responding from one set of objectives, working in a collective approach, improving information flow, creating a common understanding of other agencies' priorities and restrictions, responding in a way that is consistent with all agencies' legal restrictions, and reducing/eliminating duplicated responses (SEMS, 2006, 23). While it has gone through many evolutionary stages, in many ways, SEMS laid the foundation for the National Incident Management System, in which California is also participating.

Conceptual Framework

Because of the combination of highly structured organizations which must be flexible enough to respond to rapidly changing and uncertain environments while maintaining strong organizational structures, this research is grounded in the three main sets of theories noted earlier: traditional management, organizational learning, and network analysis. The focus is on four main factors that influence emergency preparedness and response--personal interaction, official communication, legal policies, and leadership. While each of these characteristics can be identified in all of the theory sets to a varying degree, each has a stronger presence in a particular theory base. For official communication and legal policies, it is traditional management theory; for personal interaction, network theory; and for leadership, as it pertains to recent research, organizational learning. This literature review focuses most heavily on organizational learning and network theory.

Organizational Learning Theory

Cheryl King and Lisa Zanetti suggested that "the function of public managers...is not only to *satisfy* citizen needs and desires but also to *transform* them in the public interest." In so

doing, move away from impersonal, mechanical organizations, as traditional management practices can be perceived, to public organizations with the common values of “commitment, compassion, and passion” (2005). This transition cannot take place without a fundamental shift of infusing the management of public services--getting the job done--with leadership principles--having the vision and skills to get there.

A number of recent authors, like Barbara Crosby and John Bryson in *Leadership for the Common Good* (2005), and Montgomery van Wart in *Dynamics of Leadership in Public Service* (2005), explore such essential components of effective leadership as communication, decision-making, negotiation, ethical/value-based leadership, and shared-power. Van Wart, in particular, addresses the importance of “advanced learning” as opposed to “basic learning” to facilitate real leadership growth (2005). While effective leadership requires personal development, it has an extensive impact on the daily operation of an organization. When an organization has a strong leadership drive, *learning* has the opportunity and support to take place. In so doing, effectiveness, efficiency, and economy are enhanced.

Organizational learning focuses on the processes, which are demonstrated by *behaviors* based on actionable knowledge, rather than simply actionable knowledge (which is knowing what needs to be done to realize certain goals). To understand this relationship, Argyris and Schon suggest two different models: Model I (single-loop learning) and Model II (double-loop learning) (1996).

Model I behavior creates strategies of action without inquiring as to the values of those actions. In this model, people use their theories-in-use to govern their behavior and they do not question what they are doing or why they are doing it. The principles of Model I include achieving the intended purpose, maximizing winning, suppressing negative feelings, and acting in a rational manner.

Model I behavior has two consequences. First, it is used as a defensive mechanism where the individual is protected from identifying weaknesses. Second, it leads to misunderstanding by responding to a problem the same way that it was created. No new information is gained and the employee does what he or she has always done. There is no growth within the organization.

To create growth, Argyris and Schon suggest Model II behavior, or double loop learning. It focuses on the individual understanding where problems occur and how to fix them. Double-loop learning is based on three elements: valid information, free and informed choices, and internal commitment. This approach links values with organizational transformation. Model II can be achieved through reflection and a self-recognition of individuals in organizations as agents of that organization.

This last approach is important to organizations that operate in a multi-jurisdictional or scale-free environment; it encourages continual growth within the organization to meet complex, changing environments. This enables the organization and individuals to trust more and to practice effective communication (Argyris and Schon 1976). Organizational learning also enables individuals to think and act on their own.

In a 2005 paper, Donald Moynihan focused on organizational learning in emergency management. In his case study, he examined an interorganizational taskforce responding to the contamination of a fatal poultry infection called Exotic Newcastle Disease. He found “six distinct ways in which networks learned: virtual experience, learning from others, learning from information systems, learning forums, [standard operating procedures] and learning from the past” (2005, 17). Such learning, along with Model II behavior, directly relates to how agencies approach emergency preparedness by building on experiences and relying on trust to create future emergency response procedures.

Learning as an organizational culture requires long-term support and guidance by the administration to oversee and foster the changes. It is not a quick fix but requires strong leadership to sustain a value driven environment. This approach expands traditional management theory to build upon networks of individuals for the organization to learn.

Network Theory

Unlike traditional management theory where rule of law is basic in order to increase efficiency, effectiveness and economy through the mechanics of administration, network theory is less hierarchical and relies more on interpersonal relationships to increase effectiveness. In 1967, Warren Bennis asked a poignant question, “Will bureaucratic organizations as we know them disappear because they are unable to adapt to rapidly changing environments?” (Bennis, 1967). This question, along with his identified threats to bureaucracy--rapid change, growth, complexity of technology, and change in management behavior--foreshadowed decades of study in what is now collectively called network theory.

Using Richard Scott’s terminology, network theory is an open system that is highly complex, interacting with its environment with a capacity for self-maintenance where boundaries are often blurred (2003). Stanley Wasserman and Katherine Faust solidified network analysis as a theory within the academic community. In *Social Network Analysis* (1994), they created a comprehensive explanation of the application of network theory in social research with detailed illustrations of data collection, mathematical calculations, and modeling techniques.

W. Baker identified four essential characteristics to networks: flexibility, decentralized planning, lateral ties among members, and integration across formal boundaries of discipline (Nohria and Eccles, 1992). Baker, along with such researchers as Robert Axelrod and Michael Cohen, who conceptualized the complex adaptive systems framework and stressed the importance of interaction (2000), helped to shape what now constitutes network theory.

Network theory facilitates understanding of how the “pieces” fit together in complex environments. Making and retaining relationships (even if done in a small, indirect way) and maintaining flexibility and lateral ties are critical in social and professional networks. These strengths are countered by some weaknesses.

Coser, for example, recognized many negative consequences of networks, including an erosion of democratic principles, promotion of groupthink, a return to “good old boy” type of hiring, and “enabling greedy institutions” (1975). Today, one of the largest critiques to network theory is deficient accountability.

Unlike traditional management, there are no clear accountability measures because the traditional hierarchical structures are modified and the chain of command is distorted (Nohria and Eccles 1992, and Putnam 2000). Additionally, financial accountability, one of the most easily identifiable types in public administration, has little effect in network theory as too many boundaries are blurred. As a possible solution, Behn (2001) suggested a “compact of mutual, collective responsibility” which would be a general understanding among all participants who are committed to a single purpose. This approach is little more than a “hand-shake” and does not effectively solve the accountability dilemma on a large scale.

Muhittin Acar and Peter Robertson researched the accountability issue at length in educational partnerships. They found eight major categories of challenges to partnership accountability. Most significant were difficulties in gaining access to information (Acar and Robertson, 2004).

Focusing particularly on emergency management, the need for informational access and open communication practices is well documented. Louise Comfort and Thomas Haase, for example, studied the network linkages of organizations involved with the Hurricane Katrina response efforts. They found that the limited capacity to exchange information resulted in the

“collapse of coordination in disaster operations” (Comfort and Haase, 2006, 328). This conclusion reinforces the need for open communication when operating in a network scenario to increase accountability measures.

The connotation of accountability, however, is changing. Ronald Moe and Robert Gilmore suggested that today’s accountability, to their disapproval, is focused on politically responsive performance at the expense of responsible policy implementation as defined by the rule of law. In regard to contracting out to the private sector, they suggested that “almost by design, widespread practices of [contracting out] frustrate any serious attempt to hold government officials accountable for the implementation of fundamental government policy” (Moe, 1995, 141). They advocate that public administration must return to its roots in public law instead of gravitating towards what they consider laissez faire entrepreneurial practices. This perspective is supported by Laurence Lynn, Carolyn Heinrich, and Carolyn Hill through their definition of public sector governance as “regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable the provision of publicly supported goods and services” (2001, 7).

The governance movement not only embraces rule of law, but recognizes a fundamental shift in how governments and other organizations operate. While a hierarchy is still visibly present, the bureaucratic nature of the organizational structure is reduced. This movement reflects a morphing of network and traditional management theories.

Network theory, in its purest sense, with extensive flexibility and a flat organizational structure, does not necessarily increase governmental effectiveness or economy. Modern research indicates that a blend of both network theory and traditional management theory is becoming commonplace to provide public goods and to enhance service delivery.

Keith Provan and Brint Milward stressed the importance of retaining some management theory principles in the application of network theory. In their study of four community mental health systems, they drew four conclusions: 1. “network effectiveness will be enhanced when the network is integrated, but only when integration is achieved through centralization of the network”, 2. “network effectiveness will be highest when mechanisms for external control are direct and not fragmented”, 3. “network effectiveness will be enhanced under conditions of general system stability”, and 4. network effectiveness ranges from low to high under a resource rich environment, as compared to low to moderate under a resource scarce environment (Provan and Milward, 1995). These four conclusions illustrate the need to have a central authority within a network to have the greatest effect. This is not to suggest that a steep hierarchy is necessary, but simply that the system cannot be void of this type of structure.

Two recent publications also illustrate the hierarchical change in governance. Carolyn Hill and Laurence Lynn wrote an article in 2004 on the decline of hierarchical governance. After reviewing over eight hundred individual research studies, they suggested that “shifts away from hierarchical government toward horizontal governing reflect...a gradual addition of new administrative forms that facilitates governance within a system of constitutional authority” (2004, 173). Maybe more significant than this article, however, is Stephen Goldsmith and William Eggers’ *Governing by Network*.

In this book, Goldsmith and Eggers (2004) spent considerable time not only explaining frameworks of contemporary governments, but how to manage networks. They recognize the accountability dilemma and suggest that there has to be an alignment of values and trust among all of the partners within the network. This approach counters traditional management theory that relied on process standardization.

The full implementation of pure network theory is not practical in contemporary government environments. Instead, a combination of concepts and practices of network theory and of traditional management is undertaken. Gregory Dees, Jed Emerson, and Peter Economy elaborate on three such exchanges: coordination, cooperation and collaboration. Each concept varies in definition, characteristics and resources. The most ideal stage is a collaboration network where information is exchanged, resources are shared, and capacity is enhanced for mutual benefit, all to achieve a common purpose. This requires a full sharing of “resources, risks, rewards and responsibilities” (2002).

Robert Agranoff suggests four different types of public management networks: informal, developmental, outreach and action. Informal networks are those that share policies and programmatic insights but where action is voluntary. Developmental networks share information with education to implement services among organizations. Outreach networks pool resources to achieve mutually beneficial outcomes, and action networks are full collaborative efforts (Agranoff, 2007, 10). In emergency management, although the terminology was not used in this study, all of these distinct networks are present with varying levels of collaboration.

David La Piana and Michaela Hays identify three levels of collaboration: collaboration focused on achieving organizational goals, collaboration focused on responding to programmatic needs of clients, and collaboration focused on resolving complex community problems (2005). In each case, collaboration takes commitment to share resources, to operate from a common understanding of core values and shared goals, to learn from each other, and perhaps most importantly, to create an environment of trust.

Theory Summary

There is no doubt that traditional management theory is necessary in today’s governmental structures. It provides an experience-based and logical framework in which to

create legal structures, organize personnel, and implement policy and command structures. Yet, this type of system commonly lacks flexibility to respond to rapidly changing and uncertain conditions. While the military, probably the most successful organization to model this theory, is largely successful in adapting these principles, it also has incentives and disincentives not present in other governmental entities. In that regard, another system must be in place to facilitate successful organizational development.

Organizational learning, while being a systemic way to learn from past experiences to shape how the organization responds to new conditions, is often too slow for the rapidly changing world of emergency response; it relies heavily on effective leadership principles. Because emergencies can happen in a moment without notice, double loop learning in a specific new situation is too time consuming to implement in such instances. While the strategy is helpful in learning from experiences over time and in such exercises as California's statewide Golden Guardian emergency response simulation for preparedness, such reflection is too late unless it occurs prior to an actual threat or a series of threats. This is where network theory comes into practice.

Network theory provides the flexibility necessary to respond to changing and/or uncertain conditions through relying on personal interactions. It relies on a host of experts who may or may not have direct organizational links with the other respondents. For the purpose of this study, network theory is used to facilitate understanding of interagency collaboration in threat preparedness. This framework assumes that the governmental approach to emergency preparedness and response, while grounded in traditional management theory that has a comprehensive organizational structure and is governed by rule of law, has learned that it must also be flexible to appropriately respond to rapid, uncertain, and changing situations to make communities safer. This study is designed to facilitate a better understanding of what these

approaches mean in intergovernmental/interagency collaborative efforts both to prevent and to respond to large-scale emergencies.

Research Design, Methods, and Data

The overall empirical research approach utilizes a combination of quantitative and qualitative methods. A survey was conducted among state, local, and regional personnel directly involved with emergency management during the Golden Guardian 2006 statewide training exercise in California. Golden Guardian tests and strengthens emergency response capabilities at the local, regional, and state levels. It comprises at least three different components--seminars, tabletop exercises, and a two-day, statewide exercise. The exercises are sponsored by the California Homeland Security Exercise and Evaluation Program, California Governor’s Office of Emergency Services, and the U.S. Department of Homeland Security, Office for Domestic Preparedness.

Questionnaires were distributed at the planning conferences to participants who belonged to all levels of government, local to federal, and were directly involved with emergency management practices within their respective agencies or departments. A response rate of 73 percent (147/201) was achieved with respondents coming from the levels of government as identified in Table 1; 20 percent were female.

Table 1. Number of respondents and level of government.

Level of Government	Number of Respondents	Percent
State	42	29%
County	39	27%
Local	19	13%
Federal	9	6%
Special Districts	8	5%
Nonprofit Organizations	8	5%
Private Sector	6	4%
Declined to State	16	11%
TOTAL	147	100%

Respondents were asked to rank their frequency of interactions and effectiveness of each of the four areas studied for both preparedness and response across seven levels of government-- Office of Emergency Services, State Operations Center, Regional Emergency Operations Center (regional), Emergency Operations Center (county), Field Operations (local), utility companies, and nonprofit organizations. While there were only 10 multi-part questions, they actually resulted in responding to 140 different questions if taken one at a time.

To expand understanding beyond this data set, semi-structured interviews were conducted with 14 senior emergency management personnel at the state (5 senior officials), county (6), and local (3) government levels within California, selected through recommendation by senior emergency management personnel with the State. Each of the interviewees was asked standard basic questions with other follow-up or clarifying questions asked depending on the information obtained during the conversation. To protect confidentiality and due to the possible sensitivity of future reports, the respondents are simply listed as “Informant” with a random number assigned to each interview. Also, specific geographic or personnel references were replaced or eliminated from direct quotations.

This study is not without limitations. The most important are the subjective nature of the survey responses and the number of responses (while in the aggregate, the number of respondents is large with a solid return rate, when divided across sectors, the responses vary from 6 to 42). The interviewees were intentionally selected because of their experience and reputations in the field.

Quantitative Findings

As reported in Appendix 1, the valid percentages vary across levels of government for both frequency of interaction and effectiveness. Yet, the trends appear to be consistent. That is to say, when there is a high frequency of interaction, a high degree of effectiveness is also

reported. The opposite is also true. A few interesting examples indicate that something else may be taking place.

For personal interactions during preparedness activities, there seem to be less frequent interactions, yet the effectiveness is greater for the SOC and REOC. This trend continues across communication, legal policies, and leadership as well. This suggests that the role of state and regional operations is critically important, albeit with less interactions. These trends, while noted, do not reveal a significant difference when further analyzed with regression techniques. This may be due, in part, to the low population size and subjective nature of the categories.

To better understand the relationships among the factors, these hypotheses were explored:

H₀ → There is no relationship between frequency of interaction and effectiveness in performance.

H₁ → As frequency of interaction increases, effectiveness in performance increases.

H₂ → As frequency of communication increases, effectiveness in performance increases.

H₃ → As frequency of understanding and use of set legal policies increases, effectiveness in performance increases.

H₄ → As frequency of interaction with organizational leadership increases, effectiveness in performance increases.

When bivariate correlations (Pearson correlation) were calculated to determine the strength and direction of the independent variable “frequency” and dependent variable “effectiveness” for each sector, a significant positive relationship emerged in each instance, indicating that the amount of interaction for each of the four factors is directly related to the effectiveness of that factor. This is a critical finding as it suggests that more frequent

interactions facilitate greater effectiveness in preparing for and responding to incidents. The strength of the interaction ranged from a Pearson correlation of .666 to .898. Table 2 lists the strongest positive relationships per factor studied.

Table 2. Correlations between factor and performance by jurisdiction

Factor	Governmental Level	Pearson Correlation	Sig. (2-tailed)
Personal Interactions-Response	Office of Emergency Services (State)	.883	.000
Communication-Response	Field Operations (Local)	.868	.000
Legal Policies-Preparedness	Utilities	.862	.000
Leadership-Response	Utilities	.898	.000

Interestingly, in two of the cases the strongest linear relationship was with utility companies. But, when examined more deeply, the respondents ranked their interactions with utilities as “less frequent” and “less effective.” In the case of personal interactions with the Office of Emergency Services, the median response for frequency was “less” but it was considered as being effective. This is an important distinction because it suggests that, while there is not necessarily the human connection with OES across the responding sectors, OES is still perceived to be effective when responding to an incident. For communication during a response, not surprisingly, a strong relationship was found between frequency and effectiveness with the field operations. After all, these are the first responders to an incident, and their communication with different levels of government is expected to be the strongest for maximum positive results. The median rankings were “very frequent” and “very effective.”

These calculations and observations were done in the aggregate. Next, to see if there were differences in frequency and effectiveness across levels of government, t-tests were conducted. For the sake of this paper, only the responses of two groups are illustrated, between the state and county respondents. These two groups were chosen because they had the largest numbers of respondents and were expected to show differences in interaction across the various

sectors. However, the results only indicate significant difference across 18 different questions with a confidence level at 5 percent as illustrated in Table 3.

Table 3. Difference of means between state and county responses.

Factor	Governmental Level	Frequency or Effectiveness	Sig. (2-tailed) <small>(equal variances assumed)</small>
Personal Interactions-Preparedness	State Operation Center	Frequency	.000
	Regional Emergency Operation Center	Frequency	.023
	Emergency Operation Center	Frequency	.000
	Utilities	Frequency	.008
Personal Interactions--Response	State Operation Center	Frequency	.006
	Utilities	Frequency	.000
	Utilities	Effectiveness	.036
	Nonprofits	Frequency	.004
Communication--Preparedness	State Operation Center	Frequency	.009
	Regional Emergency Operation Center	Frequency	.042
Communication--Response	State Operation Center	Frequency	.038
	Utilities	Frequency	.006
	Utilities	Effectiveness	.036
	Nonprofits	Frequency	.015
Legal Policies--Preparedness	Emergency Operation Center	Frequency	.026
	Emergency Operation Center	Effectiveness	.016
Leadership--Preparedness	State Operation Center	Frequency	.029
Leadership--Response	State Operation Center	Frequency	.001

This finding was somewhat surprising as I had anticipated that more differences would emerge. The interactions of the county emergency managers were expected to be different, especially in regard to the regions, counties, cities, utilities and nonprofits.

To better understand these relationships within the four factors studied, a more in-depth analysis is explored below from the expert interviews.

Personal Interactions

From the very first interviews, the need for personal interactions became evidently clear. While some governmental agencies can be perceived to be “bureaucratic” and impersonal, the field of emergency management is quite different. It carries with it the need to humanize policies that directly impact communities during times of need. Therefore, personal interactions are created over time and solidified to understand the personal strengths and abilities of

counterparts in other communities and other levels of government. This is done to create a system in which resources can be mobilized effectively during times of stress.

When asked to describe personal interactions in emergency preparedness and response, the reaction was nearly always the same--critical. As Interviewee 1 responded, "personal interactions are probably one of the most critical aspects to responding to emergencies." Their business focuses on people, and because of that, relationships must be created before an event happens. Informant 6 said that, during trainings in which she participated, this theme was continually reiterated--"you don't want to exchange business cards at the scene of an event." The operating rationale is that the system has to function collaboratively through the interactions of the different responders and officials and the initial interaction should not be at the time of the incident.

"When you're preparing communities or organizations for disaster preparedness, response and recovery, it's not about the plans and the documents and the tools that you have to do this, it's about the relationships and about what you establish beforehand in communication skills and interaction with them and the personal one-on-one interactions you have with the appropriate people," explained Informant 13.

The personal interactions allow a transfer of personal knowledge that assists in the preparedness, response, recovery, and mitigation of incidents. There has to be an understanding of how different colleagues respond to stressful environments and when they can contribute to the ultimate goals of minimizing casualties and property loss. This interaction builds trust, which is essential for effective networks to transpire, and it facilitates communication. Trust was a reoccurring theme, both through the interviews and in the literature review. After all, Informant 7 proposes that personal interactions are the "grease on which all business is done." Informant 5, a local emergency planner, reflected:

By virtue of the intensity and the focus of the police and fire department..., they're a bit less trusting of somebody that's dictating emergency management procedures [from outside the departments]. So, consequently, the interaction with individuals and the proof of trust and all the things that go along with that, the understanding of where you fit in the scheme of emergency management with police and fire departments is very important. So, that individual intercommunications and building trust with that is incredibly important...I think if that trust is built up, there's just more of an effort to [have reasonable interactions].

In working under stress, informants again commented on the need for frequent interactions to create better working environments and to know who the players are before an incident occurs. Not having a working knowledge of the respondents creates unnecessary delays in an incident where literally every second counts. Informant 1 gave this example:

[W]e just had a major fire this past September...the fire started on Bureau of Land Management land...and it transitioned from there to U.S. Forest Service land, and for a period of time, threatened State-responsibility area. So there were three fire entities potentially. BLM principally, while they have fire entities, they're not as much into the business of fighting the fire as they are managing the forests and managing the property. All of those three entities, BLM, U.S. Forest Service, and then also CAL FIRE, formerly CDF, basically had to work together very early on in that fire. It takes a little bit of time if you haven't worked with each other to figure out what capabilities and limitations you have and what the primary jurisdiction is going to allow you to do as it relates to fighting the fire. And that time naturally impacts the employment of resources because clearly from a local perspective, we were prepared with local agencies to get in and assist in putting out the fire as soon as we could, but the reality is a lot of the ground that was where the fire was burning was actually Forest Service ground. And Forest Service had, from their perspective, pretty good control on the fire and they were shaping in a certain direction. So it takes some time to get those things sorted out from not just an operational perspective, but just also a personal perspective of the firefighter who is in charge from the Forest Service communicating with the firefighter who is in charge from CAL FIRE communicating with any of the other local entities who were participating in the fire. Instances where we have agencies that have worked together routinely, they're usually able to get past that real quick and very, very quickly decide that, yes, I know this fire chief right here is an absolute competent incident commander and everybody knows that, all of the local jurisdictions around them know that. And so whatever he says, we're going to do and we give up that command of control very, very quickly potentially.

Personal relationships emerge in a variety of ways. The most evident are trainings and conferences, but certainly relationships also emerge when responding to an incident. Emergency managers also provide opportunities to build relationships outside of formal events. For example, some emergency managers create social environments where families can interact around picnics, barbeques, or other more casual settings.

Informants also talked about the importance of learning from other emergency managers and training exercises. Multiple informants shared the importance of mentoring each other in

both applying policies and responding to incidents. This was true with more experienced managers mentoring less experienced, but it also existed among managers who had similar years of experience. Trainings were also mentioned multiple times. In one example the manager shared an experience where the county trained for a large-scale incident which had multiple casualties. A few weeks after that exercise, a real incident occurred where three school buses were involved in a multi-vehicle pile up, resulting in mass casualties. The training a few weeks earlier was able to sort out command and control challenges that faced the responding organizations so that, when the real incident occurred, they were able to respond quickly and efficiently. Even though the causes of the casualties were different, the mechanisms that were needed to respond successfully were familiar.

From both the interviews and survey responses, personal interactions are an integral part of emergency management. Training together and learning from each others' experiences are ways to both understand individual capabilities and build trust within the relationships. Communication is another critical component to emergency management.

Communication

Effective communication techniques and resources are needed to both prepare for and respond to an incident. During the interviews, technological advances were always mentioned, like e-mail and cell phones. But, there is a strong realization that these technologies can also be a hindrance to building relationships. As Informant 8 remarked,

[P]eople getting glued to their computers is a real big problem with the emergency operations centers because they are not interacting...[E]-mails are very different than phone calls...Picking up the telephone and talking to somebody is very different than sending an e-mail and waiting for a response. I think a lot of it ends up with people kind of hiding behind e-mails a little bit so they don't have to have personal relationships. It is just electronic information. Passive-aggressive types, it is a perfect environment for them.

Informant 8 went further to say that "most of your problems get worked out when you are talking to people face-to-face. They are not getting solved on a computer."

In most of the interviews, the informants talked about how e-mails, while a good record keeping system and a convenient way to share documents or other information, can become too overwhelming to effectively respond. Informant 12 proposed that

technology has created a false sense of vetting of information... And the email that we get every day can exceed our capacity to evaluate it all reasonably. The fact that people no longer have to type a letter, put in an envelope, lick it, and put a stamp on it and go down to the post office has really changed their willingness to - and the fact that they don't have to make 100 copies of a 500-page document. They do it electronically and it's encouraged them to just do this data dump, this fax, the email out that I've given you a copy, I gave you two weeks to look at it. Well, gees, two weeks from now, it's buried so deep in my email, I may not find it. So I think that's one of the downsides with the last decade that we have become overly reliant on technology.

By far, the most important type of communication expressed was one-on-one interactions in person or by a telephone. Even though physical, visible presence is not present in each instance, these types of interactions can also be considered "face-to-face," as a direct human connection exists with the other person involved in communicating.

"[F]ace-to-face communication...is absolutely the best. It's the best," reflected Informant 5. He explained that this type of interaction can quickly clear any misconceptions, and it makes the other person know that you are genuinely concerned about what they are doing or going through. It is a way to show direct, personable support. Another important component of this type of interaction is to understand individual approaches to the same problem.

Informant 7 reflected on this example from his military experiences.

I had three captains who were company commanders and when you were out in the field moving through the woods, there were certain checkpoints that were put on the map, and they were usually terrain features like the top of the hill, the intersection of a road, something easily definable, so one of the things was that when you reached a checkpoint you were to call in and say that you had reached the checkpoint. And it would be just the radio operator saying you know Company A, checkpoint 4, Company C, checkpoint 5. I knew that all three of those captains did it differently. One of them, [Captain 1], said he was at Checkpoint 4, that meant [Captain 1] was physically standing in the middle of that intersection. He did not report in until he physically - he personally was standing there. [Captain 2], if his lead guy was there, he called it in. He personally could have been 300 or 400 yards or more from there, and the last guy, when he called it in I was never sure if he was even within 1,000 yards of it or if he ever found it. That is when I would then turn to the artillery guy and have him call through the artillery spotter net down to the artillery forward observer that was standing next to this captain and have the question asked, where are you? Because I did not trust this guy, that he could read a map, that he knew where he was. So, by having personal relationships with these people, knowing them and working with them, I had three different answers to the same question.

The experiences shared regarding communication tended to fall back into the importance of personal relationships. Communication appears to be more effective when two individuals are speaking directly with each other as opposed to other, less personal forms of communicating like e-mails.

Legal Structures

Legal structures create the framework in which emergency management can take place. As discussed in the Contextual Framework, California's emergency preparedness and response procedures are a direct result of the large scale incidents that impact multiple jurisdictions and communities each year. Through organizational "Model II" learning, California was able to adapt its preparedness and response because of the valid information, free and informed choices, and internal commitment which is inherent in the emergency management system. Part of this evolution is how SEMS and NIMS is applied in its current approach, but mutual aid agreements are an integral part of this system.

Mutual aid agreements are easily seen across fire departments and law enforcement departments in neighboring jurisdictions. The California Master Mutual Aid Agreement clearly specifies how resources can be utilized, and how the agreements are to be funded. These agreements are flexible, and they require trust and relationships to be successful--trust to know that they assure support, and relationships to understand what resources and abilities are available when an incident occurs. This is consistent with Behn's approach to collective responsibility (2001).

Legal structures go beyond policies that define operational procedures. Legal structures also affect funding. Because they are a societal responsibility, emergency management operations are publicly funded. At the local level, this is generally through city allocations; at the state level, state funds, etcetera. Consequently, there is a political component on what type of

funding is provided, the consistency of that funding, and when it occurs. As demonstrated after 9/11 and Hurricane Katrina, a lot of funding is allocated to emergency management after an event occurs. Yet, the restrictions and types of funding are less than ideal. Current federal grant monies heavily focus on purchasing equipment and training exercises dedicated to terrorism. In a state that is constantly faced with natural disasters, allocating funding in this way is misappropriated because it does not realistically address the imminent threats.

Some people say that how one prepares for a terrorist threat relies on the same systems as preparing for a natural incident. In part, this is true. But the type of equipment, its mobilization, and other resources needed to successfully address the incident, not to mention the intelligence requirement, varies greatly. Allocating funds to purchase specialized equipment when there may be sufficient resources regionally is unwisely spent when it could be used to create sustainable programs with the necessary staff additions. Yet, grants tend to focus on tangibles rather than personnel. This may be appropriate for other states, but in California, the need is not as much on equipment but rather on the staff to make the system work. While there are some grants that permit investments in enlarged staff, the general impression is that it has to be used towards equipment or the training of existing staff.

During the interview process, while the initial line of questioning did not specifically inquire about staff shortages, half of the informants brought it up. They feel that, at all levels, staff shortages are having a negative impact on the emergency management system. Part of this impact is the focus of staff to be grant writers and managers instead of being able to make the human connection with other counterparts and levels of government that make a collaborative response possible. Additionally, emergency management still takes a reactive approach to incidents. Instead of being proactive in assessing and mitigating threats before they occur, staff shortages result in skeletal operations. This has led to increased daily stress among current

managers and, at least at the regional level, has resulted in more experienced personnel leaving their positions.

In small-scale emergencies, the staff shortage may not be a big deal. But, if a large incident occurs, this could drastically affect the response and recovery efforts. In the current system, when a large fire occurs, personnel and resources are deployed from throughout the state and sometimes beyond. This approach works because all of the California fire personnel utilize the same type of equipment with very specialized jobs. In emergency management, this cookie-cutter approach cannot work. Since emergency management is most effective through personal connections and interactions, planning to bring in emergency managers from unfamiliar areas may cause delays in response activities.

Leadership

Leadership, as with all organizations, is an important component to the success or failure of an organization's objectives or mission. When asked to identify qualities that leaders must have, the informants gave similar responses, which were not unexpected; these stressed vision, listening, integrity, taking charge, authority, confidence, decisiveness, and empowerment. There were also a few notable exceptions, like "staying out of the way."

Informant 13 provided an example where political leadership insisted on taking a "photo op" relatively soon after a portion of a freeway collapsed. Two days after the incident, a prominent politician wanted to be visible at the site while rescue efforts were still underway. For security reasons, the efforts had to stop. The impression at the time was that there could not be more survivors because so much time had lapsed since the incident occurred. But, in actuality, there was a survivor who was found on the fourth day. Had the rescue efforts not stopped for the previous day, Informant 13 felt that the person could have been found one day sooner.

Another example was from Informant 4, who expressed frustration over a governor who requested a large amount of information that was not easily attainable while response activities were taking place. In this scenario, a large flood had impacted multiple communities. While the emergency response procedures were activated, the governor requested a list of all the mayors with contact information so that he could personally connect with them and offer support. The request seemed innocent enough, but there were a few drawbacks.

First, the information was not easily accessible. At the time, needed information had not been previously collected, so that large amounts of staff time about who should have been involved with recovery efforts were required to fulfill the governor's request. This obviously caused resentment because another informant at a different level of government also commented upon the request.

Second, in some cases, the mayor was not the best person to contact. Because local government administration structures vary, like a *Weak-Mayor Plan*, *Strong-Mayor Plan*, *Commission Plan*, or *Council-Manager Plan*, contacting the mayor of each city to offer support may not have been the best approach to assess need or promise resources. In some cases, contacting the city manager, for example, would have been more appropriate when the mayor is simply a figurehead.

Finally, when the governor made the calls, he promised resources that were not originally intended to be allocated to the specific communities. In this instance, it is a matter of having limited resources and allocating them based on need. By the governor having side conversations outside of the collective emergency response, resources were committed, which could have had a larger impact somewhere else.

The balance between political leadership and the emergency manager leadership is delicate as both sides need each other. Yet, especially in times of response and recovery, the

emergency management system must be left to work as intended. That way baseline order is brought to an already chaotic environment.

When inquiring as to how leaders emerge within the organization, similar themes to the personal interactions were illustrated, like experience, relationship building, training exercises, and demonstrated professionalism. This leads to the importance of developing leaders from within the emergency management field who know the intricacies of the system instead of bringing in people from outside the organization to lead it.

Conclusion

The importance of direct personal interactions cannot be understated. Even when studying other factors like communication, legal structures and leadership, it is the conversations around personal interactions that dominated. There is a direct need to be humanly connected in both the preparation of and response to incidents. Trust and understanding, available resources and human interactions are essential in the efficiency, effectiveness and economy of emergency management.

The surveyed respondents share in this understanding through their ranking of both the frequency and effectiveness of their interactions among different levels of government. In each of the factors, a positive linear relationship emerged, indicating that increased frequency leads to increased effectiveness across all factors studied. Naturally, this is contingent upon the opportunity to interact. Yet, the most interaction and effectiveness tended to revolve around personal interactions, communication and leadership. Legal policies, while still important to create the framework from which the emergency managers operate, are guiding principles instead of concrete policies without flexibility. This flexibility allows the network relationships and partnerships to emerge not only to respond to incidents in appropriate ways under varying environments but also to share knowledge and resources to enhance organizational learning.

The field of emergency management is incredibly complex. Having systems that allow an open exchange of information with freedom to utilize professional discretion in decision-making creates opportunities to make quick decisions that are in the best interest of controlling incidents to minimize the loss of life and property.

Discussion

As a way to create a discussion around these findings, emergency management organizations should actively:

1. foster environments where personal interactions, both formal and informal, can thrive.
2. have dedicated funding sources that allow local, county, and state to implement long-term goals.
3. get out of the trap of being reactionary and take a proactive approach to eliminate or minimize known threats.
4. continue to have legal structures that provide frameworks but that are flexible to adapt to local or regional environments.
5. continue to encourage mutual aid agreements where neighbors benefit neighbors.
6. encourage leadership principles, not simply administrative processes.
7. continue to provide realistic training exercises that test the emergency management system without creating a false sense of security.
8. build from past experiences to redefine the role and capacity of emergency management.
9. search for humanness in the positions and appreciate the people who make the system work.
10. have enough staffing to allow relationships to occur.

11. manage political leaders to let the emergency management system work, especially in terms of allocating resources and responding to an incident.

California's emergency management approach is one in which there are legal boundaries but with flexibility to respond to uncertain and changing environments. The largest strength is the development of personal relationships that lets the system work. The challenge is creating environments that foster human connections given the demanding workloads and limited staff. In its present state, some of this is taking place, but it is evidently clear that room is needed for more of these interactions.

The payoff for additional staff is to ultimately increase the effectiveness of preparedness and response activities. Because there is a strong linear relationship among the factors, it would stand to reason that, if the frequency of interaction increases, so can the effectiveness. But, in order for this to occur, additional financial resources and political support must take place. While this happens after a major incident, like 9/11, a more proactive approach should be taken to mitigate future loss of life and property damage. This is possible to do, but it requires enough staffing to allow administrative processes to take place as they are now and to strategize collectively to prepare for known and unknown threats. These processes cannot take place simultaneously by the same individuals, as operationally it is the difference between management and leadership.

Appendix 1: Aggregate survey responses for frequency and effectiveness

Sector Legend:

OES - Office of Emergency Services
 SOC - State Operations Center
 REOC - Regional Emergency Operations Center
 EOC - Emergency Operations Center
 Field Ops - Field Operations
 Utilities - Utility Companies
 Nonprofit - Nonprofit Organizations

Scale Legend:

5 - Very Frequent or Very Effective
 4 - More Frequent or More Effective
 3 - Frequent or Effective
 2 - Less Frequent or Less Effective
 1 - Not At All Frequent or Effective
 0 - Not Applicable

		Very 5	4	3	2	None 1	N/A 0
Personal Interactions--Preparedness							
OES	Frequency Valid Percent	23.4%	10.3%	20.0%	24.1%	19.3%	2.8%
	Effectiveness Valid Percent	20.3%	11.2%	33.6%	10.5%	8.4%	16.1%
SOC	Frequency Valid Percent	3.5%	7.1%	9.2%	31.9%	43.3%	5.0%
	Effectiveness Valid Percent	7.9%	6.4%	25.7%	12.1%	17.1%	30.7%
REOC	Frequency Valid Percent	7.7%	5.6%	12.0%	41.5%	28.9%	4.2%
	Effectiveness Valid Percent	10.7%	13.6%	27.9%	15.0%	12.9%	20.0%
EOC	Frequency Valid Percent	24.3%	20.0%	22.1%	18.6%	10.7%	4.3%
	Effectiveness Valid Percent	28.5%	16.1%	29.2%	7.3%	5.8%	13.1%
Field Ops	Frequency Valid Percent	29.9%	14.6%	13.9%	22.9%	11.8%	6.9%
	Effectiveness Valid Percent	32.4%	18.3%	22.5%	7.0%	3.5%	16.2%
Utilities	Frequency Valid Percent	9.9%	7.0%	14.1%	27.5%	26.8%	14.8%
	Effectiveness Valid Percent	11.3%	13.4%	23.2%	12.0%	12.0%	28.2%
Nonprofit	Frequency Valid Percent	9.7%	5.5%	15.9%	28.3%	26.2%	14.5%
	Effectiveness Valid Percent	15.3%	12.5%	25.0%	7.6%	13.9%	25.7%
Official Communication--Preparedness							
OES	Frequency Valid Percent	16.1%	15.4%	18.9%	26.6%	18.2%	4.9%
	Effectiveness Valid Percent	15.1%	13.7%	32.4%	12.2%	9.4%	17.3%
SOC	Frequency Valid Percent	4.3%	10.7%	7.9%	30.0%	37.1%	10.0%
	Effectiveness Valid Percent	8.1%	6.6%	23.5%	14.7%	17.6%	29.4%
REOC	Frequency Valid Percent	7.1%	9.3%	10.7%	32.1%	31.4%	9.3%
	Effectiveness Valid Percent	11.7%	10.9%	26.3%	13.1%	14.6%	23.4%
EOC	Frequency Valid Percent	23.6%	17.9%	17.9%	20.7%	13.6%	6.4%
	Effectiveness Valid Percent	23.5%	19.9%	25.0%	11.8%	5.9%	14.0%
Field Ops	Frequency Valid Percent	26.8%	15.5%	14.1%	18.3%	16.9%	8.5%
	Effectiveness Valid Percent	25.9%	21.6%	19.4%	8.6%	7.9%	16.5%
Utilities	Frequency Valid Percent	6.3%	11.3%	8.5%	28.2%	28.9%	16.9%
	Effectiveness Valid Percent	10.1%	9.4%	26.8%	10.9%	14.5%	28.3%
Nonprofit	Frequency Valid Percent	9.9%	9.9%	9.2%	22.7%	31.2%	17.0%
	Effectiveness Valid Percent	8.6%	12.9%	19.4%	11.5%	17.3%	30.2%
Legal Policies--Preparedness							
OES	Frequency Valid Percent	20.1%	12.7%	12.7%	23.1%	20.9%	10.4%
	Effectiveness Valid Percent	16.7%	11.4%	28.8%	12.9%	12.9%	17.4%
SOC	Frequency Valid Percent	7.6%	6.1%	13.0%	22.1%	30.5%	20.6%
	Effectiveness Valid Percent	7.8%	4.7%	24.2%	13.3%	19.5%	30.5%
REOC	Frequency Valid Percent	7.6%	7.6%	13.7%	24.4%	28.2%	18.3%
	Effectiveness Valid Percent	8.5%	5.4%	25.6%	14.7%	17.8%	27.9%
EOC	Frequency Valid Percent	17.9%	14.9%	16.4%	20.9%	16.4%	13.4%
	Effectiveness Valid Percent	18.3%	15.3%	28.2%	8.4%	11.5%	18.3%
Field Ops	Frequency Valid Percent	21.1%	15.0%	12.0%	19.5%	18.0%	14.3%
	Effectiveness Valid Percent	19.8%	15.3%	26.7%	6.9%	11.5%	19.8%
Utilities	Frequency Valid Percent	4.5%	8.3%	12.0%	23.3%	28.6%	23.3%
	Effectiveness Valid Percent	7.8%	7.8%	21.7%	10.1%	20.9%	31.8%
Nonprofit	Frequency Valid Percent	4.5%	6.0%	13.5%	26.3%	26.3%	23.3%
	Effectiveness Valid Percent	6.9%	6.2%	21.5%	15.4%	16.9%	33.1%

Leadership--Preparedness		5	4	3	2	1	0
OES	Frequency Valid Percent	13.0%	14.5%	25.4%	19.6%	18.8%	8.7%
	Effectiveness Valid Percent	15.2%	14.5%	33.3%	10.1%	15.2%	11.6%
SOC	Frequency Valid Percent	6.7%	6.0%	19.4%	20.1%	29.9%	17.9%
	Effectiveness Valid Percent	8.2%	7.5%	27.6%	9.7%	20.1%	26.9%
REOC	Frequency Valid Percent	8.1%	10.3%	22.1%	27.2%	20.6%	11.8%
	Effectiveness Valid Percent	13.2%	9.6%	33.8%	9.6%	14.7%	19.1%
EOC	Frequency Valid Percent	25.9%	16.3%	18.5%	14.8%	11.9%	12.6%
	Effectiveness Valid Percent	24.6%	17.2%	31.3%	5.2%	6.7%	14.9%
Field Ops	Frequency Valid Percent	28.4%	15.7%	17.9%	16.4%	11.9%	9.7%
	Effectiveness Valid Percent	24.8%	16.5%	30.1%	6.8%	8.3%	13.5%
Utilities	Frequency Valid Percent	5.9%	8.9%	12.6%	26.7%	25.9%	20.0%
	Effectiveness Valid Percent	8.3%	9.0%	24.1%	10.5%	18.8%	29.3%
Nonprofit	Frequency Valid Percent	7.4%	10.3%	16.9%	18.4%	25.7%	21.3%
	Effectiveness Valid Percent	10.4%	10.4%	20.9%	11.9%	16.4%	29.9%
		Very				None	N/A
Personal Interactions--Response		5	4	3	2	1	0
OES	Frequency Valid Percent	20.5%	12.1%	15.2%	18.2%	21.2%	12.9%
	Effectiveness Valid Percent	19.7%	11.4%	22.0%	12.9%	13.6%	20.5%
SOC	Frequency Valid Percent	11.7%	10.9%	14.8%	15.6%	32.0%	14.8%
	Effectiveness Valid Percent	12.4%	10.1%	18.6%	10.9%	17.8%	30.2%
REOC	Frequency Valid Percent	14.5%	13.7%	12.2%	22.1%	26.0%	11.5%
	Effectiveness Valid Percent	18.3%	12.2%	22.1%	9.9%	15.3%	22.1%
EOC	Frequency Valid Percent	25.0%	14.4%	20.5%	15.2%	13.6%	11.4%
	Effectiveness Valid Percent	26.2%	19.0%	27.0%	4.8%	9.5%	13.5%
Field Ops	Frequency Valid Percent	35.9%	17.2%	14.1%	12.5%	11.7%	8.6%
	Effectiveness Valid Percent	35.2%	18.8%	21.1%	3.9%	8.6%	12.5%
Utilities	Frequency Valid Percent	10.9%	11.6%	15.5%	18.6%	26.4%	17.1%
	Effectiveness Valid Percent	14.0%	10.9%	26.4%	5.4%	16.3%	27.1%
Nonprofit	Frequency Valid Percent	9.2%	6.2%	18.5%	20.8%	25.4%	20.0%
	Effectiveness Valid Percent	13.0%	9.9%	21.4%	10.7%	16.8%	28.2%
Official Communication--Response		5	4	3	2	1	0
OES	Frequency Valid Percent	18.2%	12.1%	18.9%	16.7%	23.5%	10.6%
	Effectiveness Valid Percent	20.6%	8.4%	28.2%	8.4%	16.8%	17.6%
SOC	Frequency Valid Percent	10.9%	9.4%	16.4%	17.2%	33.6%	12.5%
	Effectiveness Valid Percent	14.1%	6.3%	24.2%	8.6%	20.3%	26.6%
REOC	Frequency Valid Percent	16.0%	9.2%	17.6%	20.6%	26.7%	9.9%
	Effectiveness Valid Percent	17.6%	12.2%	23.7%	9.2%	15.3%	22.1%
EOC	Frequency Valid Percent	23.7%	16.8%	19.8%	18.3%	12.2%	9.2%
	Effectiveness Valid Percent	23.1%	19.2%	26.9%	6.9%	9.2%	14.6%
Field Ops	Frequency Valid Percent	35.2%	20.3%	17.2%	7.8%	11.7%	7.8%
	Effectiveness Valid Percent	28.5%	21.5%	23.8%	3.1%	10.8%	12.3%
Utilities	Frequency Valid Percent	7.8%	12.5%	16.4%	22.7%	22.7%	18.0%
	Effectiveness Valid Percent	13.1%	9.2%	28.5%	6.9%	15.4%	26.9%
Nonprofit	Frequency Valid Percent	7.7%	9.2%	13.8%	22.3%	26.2%	20.8%
	Effectiveness Valid Percent	12.2%	8.4%	26.0%	6.1%	17.6%	29.8%
Legal Structures--Response		5	4	3	2	1	0
OES	Frequency Valid Percent	14.3%	9.5%	16.7%	23.0%	18.3%	18.3%
	Effectiveness Valid Percent	16.0%	8.8%	22.4%	16.0%	13.6%	23.2%
SOC	Frequency Valid Percent	4.9%	9.8%	13.0%	22.0%	28.5%	22.0%
	Effectiveness Valid Percent	8.3%	5.0%	24.2%	11.7%	18.3%	32.5%
REOC	Frequency Valid Percent	10.4%	6.4%	13.6%	24.0%	24.8%	20.8%
	Effectiveness Valid Percent	9.1%	9.1%	23.1%	12.4%	14.9%	31.4%
EOC	Frequency Valid Percent	14.3%	16.7%	15.1%	23.0%	15.1%	15.9%
	Effectiveness Valid Percent	15.2%	16.0%	23.2%	12.8%	8.0%	24.8%
Field Ops	Frequency Valid Percent	21.8%	17.7%	16.1%	14.5%	15.3%	14.5%
	Effectiveness Valid Percent	22.1%	17.2%	23.8%	8.2%	9.0%	19.7%
Utilities	Frequency Valid Percent	4.0%	10.5%	12.1%	23.4%	25.0%	25.0%
	Effectiveness Valid Percent	6.6%	7.4%	30.3%	8.2%	13.9%	33.6%
Nonprofit	Frequency Valid Percent	4.0%	7.2%	14.4%	21.6%	26.4%	26.4%
	Effectiveness Valid Percent	5.7%	7.3%	26.0%	10.6%	15.4%	35.0%

Leadership--Response		5	4	3	2	1	0
OES	Frequency Valid Percent	19.5%	10.9%	22.7%	21.1%	16.4%	9.4%
	Effectiveness Valid Percent	21.3%	12.6%	22.8%	11.0%	18.9%	13.4%
SOC	Frequency Valid Percent	9.8%	9.8%	21.1%	20.3%	26.8%	12.2%
	Effectiveness Valid Percent	14.6%	10.6%	22.8%	8.1%	21.1%	22.8%
REOC	Frequency Valid Percent	13.7%	11.3%	20.2%	21.0%	25.0%	8.9%
	Effectiveness Valid Percent	15.2%	15.2%	26.4%	5.6%	19.2%	18.4%
EOC	Frequency Valid Percent	26.0%	18.1%	20.5%	14.2%	11.8%	9.4%
	Effectiveness Valid Percent	26.2%	18.3%	28.6%	5.6%	8.7%	12.7%
Field Ops	Frequency Valid Percent	29.4%	19.0%	20.6%	9.5%	11.9%	9.5%
	Effectiveness Valid Percent	27.8%	19.8%	25.4%	5.6%	9.5%	11.9%
Utilities	Frequency Valid Percent	8.1%	10.5%	16.1%	18.5%	27.4%	19.4%
	Effectiveness Valid Percent	11.3%	7.3%	26.6%	6.5%	21.0%	27.4%
Nonprofit	Frequency Valid Percent	8.0%	11.2%	13.6%	18.4%	26.4%	22.4%
	Effectiveness Valid Percent	9.6%	8.8%	23.2%	9.6%	18.4%	30.4%

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