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SECURING THE COMMONWEALTH: CHANGING EMERGENCY PREPAREDNESS IN KENTUCKY



**A study of the efforts of the Department of Homeland Security in changing
emergency preparedness at the county level**

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Capstone, Spring 2005

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Executive Summary

Statement of the Problem

During the first 24 to 72 hours following a terrorist attack, local officials and first responders will be responsible for dealing with the initial aftermath. While most officials—federal, state, and local—have all acknowledged that domestic preparedness must occur at the bottom of the governmental structure, it is unclear if any changes to emergency response planning have actually occurred at the local governmental level.

Research Questions

The intention of this capstone is to answer the following questions:

1. Has change in emergency response planning occurred at the county level?
2. Are there regional differences present in terms of organizational change and emergency response planning?

Methodology

A self-designed survey was sent to all county judge executives in Kentucky except for Fayette and Jefferson counties where the directors of emergency management received the survey (N=120). The response rate for the survey was 63 percent, which is approximately 76 counties. The data collected from the surveys used SPSS statistical software to calculate frequency distributions, correlations, Cronbach's Alpha test, and a logistic regression analysis.

Findings

This study demonstrates that change in the dependent variable (drastic change to emergency response plans) can be explained 73.8 percent of the time by the independent variables ('Mitigation Practices,' 'level of resistance to change,' 'person in charge of emergency response,' 'long-term vision,' 'political barriers,' and 'regional location'). 44 county judge executives stated that they had drastically changed their county's emergency response plans since the events of 9/11. This study also found that counties in the Pennyriple region of the stat are more likely to have drastically changed their emergency response plans based on the influence of the independent variables which all relate to increasing emergency response.

Recommendations

The following recommendations are suggested: 1) further research needs to be conducted to measure factors not captured in this study, 2) focus emergency response planning as an organizational change problem and to utilize different planned change models for different change agents.

INTRODUCTION

The date September 11, 2001, now referred to simply as 9/11, has come to represent more than the terrorist attacks on the World Trade Center in New York, the attack on the Pentagon in Washington D.C., the crashing of the aircraft in Pennsylvania, or the subsequent deaths from anthrax-contaminated mail. The events of 9/11 served as a catalyst for the United States to fundamentally change its emergency response planning. Securing the homeland became the major focus of the federal government, while finding the most effective methods and means to protect the United States became a priority. President George W. Bush created the Office of Homeland Security to coordinate, assess, and prepare the United States' internal security. Following the swift creation of the Department of Homeland Security, it became clear to many national security observers that state and local response to domestic preparedness planning were ignored or merely an afterthought. This, to many onlookers, came as no surprise because the focus on terrorism response typically has been on the federal government; however, as many planners and thinkers have come to realize, domestic preparedness is a 'bottom up' response since local responders will be the first to arrive. Director of the Department of Homeland Security, Tom Ridge, said when discussing increasing emergency preparedness that it is a "unique notion that the homeland is not secure until the hometown is secure," ("Kentucky" 2004).

STATEMENT OF THE PROBLEM

During the first 24 to 72 hours following an attack, local officials and first responders will be responsible for dealing with the initial aftermath of an attack.

When an attack occurs, local governments and municipalities can offer early leadership, help and information. While most officials—federal, state, and local—have all acknowledged that domestic preparedness must occur at the bottom of the governmental structure, it is unclear if any changes to emergency response planning have actually occurred at the local governmental level.

The question of whether changes to emergency response planning have occurred arises from the fact that many local officials throughout the United States believe they are unlikely to be affected by a terrorist attack; however, if only one thing has been learned from the events of 9/11, it is that governments at all levels and in all areas of the country must begin to think about the unthinkable. Terrorists, whether they are attempting to make broad political statements or small local ones, seek to instill fear in the populace and to alter peoples' lives. This is why, no matter how far away or unthinkable the threat of terror may seem, local governments' emergency response planners must maintain a broad focus and plan for the unthinkable. The question becomes how can one assess local government preparedness hundreds of miles from *ground zero*?

Many researchers have attempted to approach the question of local preparedness by conducting a threat assessment. While threat assessments reveal infrastructure weaknesses, emergency response plan failures, or other vulnerabilities, they fail to assess the fundamental problem all businesses, organizations and agencies face—Change. It is easy to acknowledge that change needs to occur, but it is difficult to effectively manage the needed changes within an organizations' environment. This

is the situation being brought about by the new environment of global terrorism: organizations and governments need to change.

BACKGROUND

Organizational Change

Change comes in many shapes and sizes—sometimes change is incremental and rarely noticed, while other times change is large and dramatic. The importance of organizational change is matched equally with the difficulty in successfully completing change. The study of change is not new—how and why people change has been the focus of research for some time. What is change? Change involves “movement between some discrete and rather fixed ‘states,’ so that organizational change is a matter of being in State 1 at Time 1 and State 2 at Time 2,” (Kanter, 1992, p.9). Organizational change can be perceptual or empirical. It can be perceptual because much of the change experience is based on point of view. The point of view of those who are creating change as an intentional process will be different from those on the receiving end of the change process. It can be empirical because any organization is defined in its operations by the presence of a set of characteristics associated with enduring patterns of behavior “both of the organization as an entity and of people involved in it,” (Kanter, 1992, p.10). When the need for organizational change arises or an organization decides to change the actions that will take place will appear as planned change initiatives. Planned change consists of activities that are intentional and goal oriented. The goals of undergoing planned change are:

- 1) It seeks to improve the ability of the organization to adapt to changes in its environment
- 2) It seeks to change employee behavior (Robbins, 2003, p.558)

It is important to note that even the best planned change initiatives taken by an organization can and will be met with resistance. One of the most well documented findings from studies of individuals and organizational behavior is that “organizations and their members resist change” (Robbins, 2003, p.559). Resistance to change, while extremely difficult to overcome, is necessary for the survival of an organization. If resistance to change were absent from an organization, “organizational behavior would take on the characteristics of chaotic randomness,” (p.559). It is important also to note that a change may appear to only produce minimal resistance upon the initiation of the change; however, marked overt resistance may not appear until weeks or months later.

Homeland Security—Force for Change

The creation of the Department of Homeland Security was in itself a drastic bureaucratic change that initiated major ripple effects on local governments throughout the United States. Local governments’ environment changed with the push for increased preparedness by the DHS. Local governments were pressured to change their emergency procedures and security procedures both by the federal government and local constituents. It is unclear whether the outside forces to change were sufficient enough to overcome the resistance to break from the norm. Traditional organizational change theory argues that the politics of change suggests, “that the impetus for change is more likely to come from outside change agents, employees who are new to the organizations, or from managers slightly removed from the main power structure,” (Robbins, 2003, p.563). Traditionally, acting as change agents, “they can symbolically convey to various constituencies—

stockholders, suppliers, employees, customers—that they are on top of problems and adapting to a dynamic environment,” (p.563). Change is unique when assessing the creation of the DHS and local preparedness because change has to occur at different levels of government—federal, state, and then local—at the same time while overcoming different restraining forces. Change theorist Kurt Lewin looked at organizational change in terms of opposing forces. Lewin stated “it is of great practical importance for any type of social management that production levels are quasi-stationary equilibrium which can be changed either by adding forces in the desired direction or by diminishing opposing forces,” (Lewin, 1951, p.217).

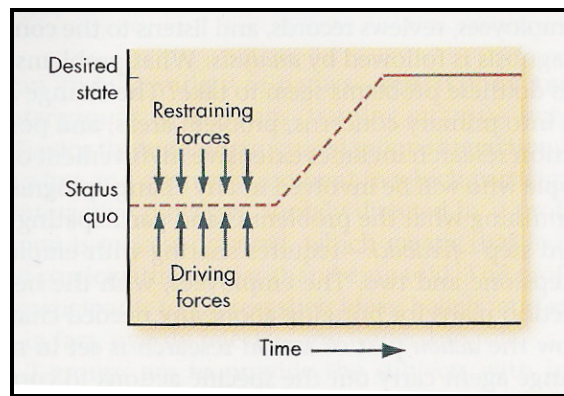


Figure 1: Robbins, 2003, p.565

When one takes Lewin’s theory and begins to examine the efforts of the DHS, it is unclear if this department has been successful at adding driving forces in the desired direction of increased local preparedness. While many can cite the effects the DHS had on the federal government and its bureaucratic agencies, it is unclear exactly how successful DHS has been in changing local governments. The DHS’s most apparent forces for change at the local level have been financial incentives and grant competition; however, are those driving forces sufficient in causing the desired organizational change that is needed to increase preparedness at the local level?

Should the DHS solely be responsible for providing driving forces for change to occur at the local response level?

The Commonwealth of Kentucky

Kentucky is no stranger to terrorism or terrorists. In a speech, former Governor Paul Patton said that the “Militant militia groups, the Ku Klux Klan, drug cartels, organized gangs, money laundering, drug trafficking, school shootings and the recent shocking murder of a county sheriff are all examples of terrorist acts” the Commonwealth has faced in its storied past (“Homeland” 2002). Fifty years ago, only 37 percent of Kentuckians lived in urban areas. Today, more than half the Commonwealth’s population resides in an urban (city) environment. The Commonwealth of Kentucky is quite unique in the number and diversity of its local government entities. The Commonwealth is a national leader with its 120 counties, 435 cities and towns, 15 area development districts, 1,300 special districts and 176 school districts (Miller, 1994, p.269).

Kentucky’s county governments are similar to many local governments throughout the United States because their leaders believe the possibility of a terrorist attack seems unlikely and almost impossible—making an increase in the driving forces nonexistent. The perception of the need to change Kentucky’s county governments has been viewed as small; however this perception has not stopped the DHS from trying to force preparedness changes to occur. The Department of Homeland Security has made available more than \$4.4 billion nationwide in funding for grants since March 1, 2003, directed toward first responder groups, both at the state and local governmental levels, to enhance response and preparedness

capabilities. In the 2003 fiscal year, the state of Kentucky ranked 20th among the 50 states and the District of Columbia in per capita expenditures by the U.S. Department of Homeland Security (Alford, 2003). The Department of Homeland Security spent or earmarked “\$126.4 million in Kentucky for grants, contracts, and salaries from Oct. 1, 2002, through Sept. 30, 2003,” (Alford, 2003). The exclusive use of financial incentives as a driving force to obtain the desired changes in local preparedness has not produced conclusive evidence that change has occurred.

Roughly thirty dollars and seventy cents was spent per resident of Kentucky in 2003 for Homeland Security. As has been the national trend, local governments are increasingly responsible for fulfilling and paying for federal initiatives. This has become painfully obvious in the spending for Homeland Security initiatives. The appropriation cycles of federal funding have been erratic causing extreme “burdens on local governments to continue preparedness activities when there is no federal funding, and to thoughtfully and strategically apply several years of federal funds and millions of dollars at one time,”(Alford, 2003). When federal funding is available, most of the spending is limited to the acquisition of technology. The implementation, training, and personnel increases have to be met by local government budgets.

In 2003 the Kentucky counties that received the greatest amount of homeland security funding were Franklin, Jefferson, Boone, Fayette, and Kenton with the maximum going to Franklin in the amount of \$69.2 million. That large amount of funding to Franklin County placed its per capita spending at \$1,440.63 per resident (Alford, 2003). Pendleton County, which ranked last in state spending per capita spent 43 cents per resident, Grant County 56 cents, Garrard County 46 cents, Green

County 52 cents and Lincoln County 60 cents (Alford, 2003). Spending in Kentucky at the county level can serve as a model of the effectiveness or ineffectiveness of Homeland Security funding of preparedness initiatives. What is unclear is if the efforts and spending of the Department of Homeland Security have been sufficient enough to act as a driving force for changing preparedness in Kentucky.

LITERATURE REVIEW

Organizations are consciously coordinated social units, composed of two or more people that function on a relatively continuous basis to achieve a common goal or set of goals. Similarly, governments (local, state or federal) are political organizations that are comprised of individuals and institutions that are authorized to formulate public policies and conduct public affairs. While there are very few organizational theorists that apply the various organizational change theories to government, the theories can be applied to any organization whether it is business, government or non-profit. Perhaps the most important organizational change theorist is Kurt Lewin and his force field theory.

From the 1950s until early 1980s the field of organizational change was dominated by Lewin's planned change approach, which he wrote about in his book *Field Theory in Social Science*. Though often portrayed by critics as a simplistic approach to change, Lewin's is comprised of complex elements. The first complex element is field theory that is an approach to understanding the complexity of group behavior and the field in which it occurs. Field theory focuses on the struggle between driving forces (forces that direct behavior away from the status quo) and restraining forces (forces that hinder movement from the existing equilibrium) and change is the result of altering one or both of these forces. The second element is Lewin's three-step model seen below.

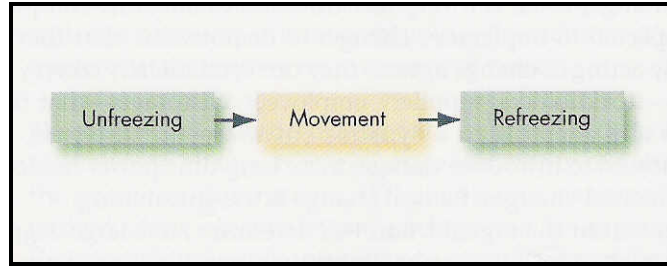


Figure 2: Robbins, 2003, p.564

Lewin believed that the stability of human behavior is based on a quasi-stationary equilibrium supported by a complex field of driving and restraining forces. Lewin argued that equilibrium needs to be unfrozen before new behavior can be adopted. The movement step is where the change occurs. The final step is refreezing. Refreezing seeks to stabilize the organization or group at the new equilibrium. For this model of unfreezing, movement, and refreezing Lewin believed that planned change must occur for the model to be successful. Leaders of organizations must be able to recognize or understand how to use driving forces to upset the equilibrium within their organization in order to begin the change process. Thus, what Lewin was really discussing in his model was that leaders must use some kind of planned change model to successfully go through the three steps of the change process.

As noted by researcher Bernard Burnes, the planned change model created by Lewin has begun to attract criticism about its appropriateness and usefulness especially from the culture-excellence school of thought. Proponents of culture-excellence argue “that Western organizations are too bureaucratic, inflexible, and slow to change,” (Burnes, 2003, p.888). The culture-excellence approach calls for organizations to adopt flexible cultures that promote innovation, entrepreneurship and that “encourage bottom-up, continuous and cooperative change,” (p.888).

At the same time that the debate between Lewin's theories and the culture-excellence theory takes place, others were assessing the outcomes of change from a power and political decision-making process. These change researchers believe "the objectives and outcomes of change programs are more likely to be determined by power struggles than by any process of the rational decision-making method" (Pfeffer, 1992). According to Pfeffer, power is central to organizational change. Building on this theory of change the process approach emerged in the 1980s. Researchers that support this theory argue, "change is continuous, unpredictable, and essentially political in nature," (Pettigrew, 2000).

In a 1985 paper, Tushman and Romanelli described an evolutionary process of punctuated change models (Sastry, 1997, p.238). With the model of punctuated change, researchers have created a way to differentiate and reconcile divergent models of change. In doing this they were able to show how the same organization may "exhibit two different modes of behavior—adaptive and inertial—at different times," (p.238). Punctuated change models provide a means for "integrating the strategic management and adaptationist views of organizations as readily changeable," (p.238).

Researchers Kanter, Stein, and Jick point out that regardless of the particular change models used to explain the change process, there are problems unique to change. They believe that there are several reasons it is difficult for an organization to undergo change. The first reason they recognize is that it is hard to make changes stick. The second is there are clear limitations to managerial action in making change. The third is to attempt to carry out programmatic continuing change through

isolated single efforts that are likely to fail because of the effects of system context. The fourth problem is the need for change that may make it harder to change (Kanter, 1992, p.5).

Once you begin to understand the various models of change and their unique problems, then you can begin to make organizational changes. Researcher William A. Medina argues that knowing the model of change and being aware of the problems are not the only things needed to undergo successful change. He argues that before attempting change you must first understand the organization to select the most successful approach to changing (Medina, 1982). Though his research focuses on how it is necessary to understand the organization to implement change at the federal government level, it has implications on change occurring within any branch or bureaucracy within any level of government.

After understanding the organization where the change will take place, there are two models that can be used to successfully implement change. The first is the Managing Complex Change model which researchers Adams, Kingsley, and Smith used to examine the change process within the Brandeis University's Center for Youth and Communities. The Managing Complex Change model draws upon a five-element framework that can help practitioners manage the change process. This model has been applied to change efforts in many communities and it has been found to be an excellent tool for successfully understanding and implementing organizational change (Adams, 2005). When looking at the model it demonstrates that you need all five elements present for change to occur. Those five steps are Vision, Skills, Incentives, Resources, and an Action Plan. When one or more of the

steps are missed or not fulfilled, the change agents may experience confusion, anxiety, gradual change, frustration, or false starts.

While the Managing Complex Change model is helpful when initially assessing what factors are needed to undergo a successful change process, John Kotter's model for transforming organizations provides a more step-by-step guide to change. Kotter's model has been widely used and is referenced throughout management literature. He utilizes seven distinct steps to be successful in the change process. Those steps are (1) establishing a sense of urgency, (2) creating the guiding coalition, (3) develop a vision and strategy, (4) communicating the change vision, (5) empowering broad-based action, (6) generating short-term wins, and (7) anchoring new approaches in the culture (Kotter, 1996).

While researchers disagree on the best approach to successfully implementing organizational change they all agree that successful change is a difficult process. A process that requires planning, management skills and leadership focused on what the changed result should be. Change does not occur when a leader decides changes need to be made. Successful change requires leaders that can successfully balance the driving and resisting forces for change.

METHODOLOGY

Objective

The objective of this capstone project is to use the issue of Homeland Security as a platform to examine change. The subsequent data analysis is used to assess if the events of 9/11 and the creation of the Department of Homeland Security drive the need to change emergency preparedness planning at the county government level.

Research Questions

1. Has change in emergency response planning occurred at the county level?
2. Are there regional differences present in terms of organizational change and emergency response planning?

Hypothesis

The null hypothesis of this study is

H₀: Matters relating to Homeland Security do not drive the need to change emergency response preparedness at the county government level.

which is tested against the alternative hypothesis:

H₁: Matters relating to Homeland Security do drive the need to change emergency response preparedness at the county government level.

Unit of Analysis

The specific population of interest for this study is the 120 counties that make up the Commonwealth of Kentucky. In order to generalize about the entire state of Kentucky's county government level of preparedness, the sample surveyed were are all County Judge Executives with the exception of Kentucky's two City/County merged governments. In the case of Lexington-Fayette and Louisville-Jefferson, the Directors of Emergency Response/Management were surveyed.

Research Tool

The research will be conducted for this study using an original survey designed by the author and descriptive data provided by the National Association of Counties. A survey was chosen as the main data collection tool because it can accurately measure people's attitudes, beliefs and behaviors quickly and consistently from numerous respondents. In creating the survey, the author took into account the possibility that question order could affect the responses of the survey. In ordering the questions, the author considered the impact of each question on the respondents and their likelihood to complete the survey. Questions that ask sensitive information were left until the end. This was done deliberately to help avoid having the respondent's fear that the purpose of the survey is to check-up or criticize them. The questions are all closed-ended questions (a question with response alternatives provided) with the exception of question 32 that was an opened-ended question (question with no response alternatives provided for the respondents). The closed-ended questions offer response alternatives in three forms: Multiple Choice, Likert Scales, and Yes/No responses. The questions and alternative responses are varied throughout the survey to avoid a response set, or straight-line responding. The questions that require more thought appear first in the survey while the less involved questions are left at the end in an attempt to overcome possible respondent fatigue.

The survey questionnaire requests information about each county's emergency response plans, the level of resistance to change they have experienced, sources of resistance to change, and management techniques utilized for successfully changing. Specifically in their emergency response plans questions will be targeted at how efficiently those plans address:

Infrastructure—critical infrastructures are not interdependent but rather dependent upon others. Critical infrastructure examined in this study will include agriculture, food, water, public health, information and Tele-communications, energy, transportation, and banking and finance.

Authority and powers—following a terrorist event who is in charge, who can make decisions to coordinate county services to save lives and minimize infrastructure losses must be addressed in the emergency response plan and understood by officials.

Departmental roles and responsibilities—it is important for every employee and department of a county to fully understand their roles and responsibilities in helping manage the situation. The public works employees must know exactly what their duties are during an emergency just like the Judge-Executive or Sheriff.

Training and planning—preparation and proper responding to a disaster or terrorist event. A comprehensive training program must be designed to ensure that they are able to cope effectively with any emergency.

The survey was designed through careful study and analysis of Armando Bevelacqua's "Terrorism Handbook for Operational Responders," Juliette Kayyem's "First to Arrive: State and Local Responses to Terrorism," the Kentucky League of Cities State Homeland Security Assessment Program and incorporates two specific organizational change models. The change models are Kurt Lewin's organizational change theory and the managing complex change models. The survey did this by asking questions that were applicable to emergency response planning and related to change theory. An example of this was question 3 which asked, "What barriers to change have your emergency response plans had to overcome?" This question provided possible answers that research has seen as barriers to changing emergency response preparedness like political, financial, limited skills, and limited resources. (See Appendix A for the complete survey)

Response Rate

Response rate refers to the proportion of respondents selected for participation in a survey who actually participate through responding. If this proportion is low because possible respondents have refused to participate in taking the survey the ability to make statistical inferences for the sample (which include 120 counties) may limit this project. The actual response rate for this project was 63 percent, which is approximately 76 counties. To help insure such a high response rate an introductory letter was sent one week prior to the mailing of the survey. The survey was mailed with a cover letter that explained the project, urged participation, and included a self-addressed return envelope (postage-paid). The initial surveys had a 2-week return deadline. Those counties that did not respond within the 2-week deadline were sent a reminder postcard that let them know they still had time to get their survey included in the study. Several additional surveys were sent out to counties who had lost or misplaced their original copy and had requested the extra survey. Unfortunately, time ran out and prevented a complete additional mailing of the survey to those counties that had not responded.

Data Analysis

To attempt to answer the research questions posed by this capstone project there were two analytical approaches utilized. Those approaches while different, both were assessed using the statistical software SPSS 12.0 to calculate and run the various statistical models. The first approach utilized the frequency distributions of the various organizational change elements to understand the problems and difficulties local officials face in changing and improving emergency preparedness. This was done by dividing the respondents into two groups; those who stated that they had

drastically changed their emergency response plans since the events of 9/11 and those who did not. Then using the survey questions that measured if the respondents were using the Managing Complex Change model's five steps (Vision, Skills, Incentives, Resources, Action Plan), percentages of usage were calculated and placed in the model. This may help various change agents better understand how to overcome resistance to change because this model requires change agents to accomplish five steps before the change process is complete and successful.

The second approach utilized the logistic (dummy variable) regression analysis to assess the overall likeliness of Kentucky's counties to change their emergency preparedness as a result of the efforts of the Department of Homeland Security and the events of September 11, 2001. A regression analysis attempts to discover if a relationship exists between a dependent variable and various independent variables. Logistic (dummy variable) regression was used in this analysis because the dependent variable in this project was based on a binary response to explain variation. A binary response typically is a question that renders a yes or no response. In doing social science research, binary responses are coded numerically—'yes' responses are coded as 1 and 'no' responses are coded as 0 or as dummy variables as they are typically called. Thus each county is assigned a score of 1 or 0 depending on whether or not they answered yes or no to the question "Have you drastically changed your emergency response plans since the events of 9/11?"

The logistic regression model predicts the "probability that Y equals 1,"(Johnson, 2001, p.412). A logistic regression uses "a non-linear model in which the log odds on one response are opposed to another is the dependent variable," and

uses a curve to “show that X increases the probability that Y equals 1 increases,”(p.415). Or in other words, the probability that counties drastically changed their emergency response plans changes with changes in the independent variables.

Δ Dependent Variable

A dependent variable is some variable or action that is thought to be influenced, affected, or caused by other phenomena. The dependent variable used in the logistic regression analysis was those counties that drastically changed their emergency response plans since the events of September 11, 2001.

Δ Independent Variable

An independent variable is a factor that is thought to influence, affect, or cause change within the dependent variable. There were several independent variables assessed in this study:

1. Political barriers—was defined as one of the possible responses respondents could identify as being a barrier to change they had to overcome. It was measured using a question that specifically asked if Political barriers had been overcome to change emergency response plans.
2. Level of resistance to change—was defined numerically with the numeric answer of 5 being significant level of resistance they had experienced and an answer of 0 as none. It was measured using a Likert scale ranging 0 to 5 that asked respondents to identify the level or resistance they experienced.
3. Person in charge of emergency response—was defined using 5 possible responses; Judge Executive, Director of Emergency Response, Police Chief/Sheriff, Fire Chief, or other. It was measured by the asking the respondents who is in charge of the county’s response operations following an emergency event.
4. Long-term vision—was defined as having a long-term written vision of where judge executives would want their county’s level of emergency preparedness. It was measured using a question that requested a yes or no response.

5. Personnel changes—was defined as changes that had been made since the completion of a threat assessment. It was measured using a question that requested a yes or no response.
6. State Regions (Bluegrass, Western, Eastern, and Pennyrite)—where defined using physiological mapping. It was measured by coding the surveys prior to mailing them and then identifying them in the data set.
7. Mitigation Practices—was defined as various issues that demonstrate changes in emergency response planning. It was measured using 18 questions utilized in the survey.

The seventh independent variable ‘Mitigation Practices’ is a variable that was created by combining eighteen other independent variables. The combination of the variables was necessary in order to run a logistic regression analysis because this study had so few respondents that using a large number of independent variables would have forced the regression to give up degrees of freedom. Degrees of freedom help determine if a relationship is statistically significant. The combination of the eighteen variables together was accomplished by using several statistical processes. All of the independent variables along with the dependent variable were put into a correlation matrix, which is a table that shows the correlations among a number of variables. Those variables that had a positive correlation of at least 40 percent or higher were identified and compared to each other using Cronbach’s Alpha test. Cronbach’s Alpha measures how well a set of items (or variables) measures a single construct (“SPSS”). Cronbach’s Alpha is not a statistical test - it is a coefficient of reliability (or consistency) test. The formula for Cronbach’s Alpha test is:

$$\alpha = \frac{N \cdot \bar{r}}{1 + (N - 1) \cdot \bar{r}}$$

In this equation the N is equal to the number of variables (18 in this study) and the r-bar is the average of the correlation among the variables. As the number of variables

increases, so does that of Cronbach's Alpha ("SPSS"). The new variable that was created was termed 'Mitigation Practices' because all of the combined independent variables related to homeland security mitigation issues.

Mitigation is the process of preventing disasters or reducing related hazards and is the cornerstone of emergency management. Mitigation methods for limiting damages can be as simple as placing a fuse box higher on a wall in a flood-prone area, or as costly as strengthening a building's structure to withstand an earthquake. In terms of homeland security, mitigation methods can be improving the security of critical infrastructures, increasing planning or understanding the possible vulnerabilities an area may face. Thus the variable 'Mitigation Practices' is the sum of the variables:

1. Aftermath 9/11—this variable was created using question 1 of the survey. It asked, "Since the aftermath of 9/11, how have issues/concerns of security for your county changed?" It was measured using the response alternatives greatly, somewhat, very little, or not at all.
2. Focus on planning—this variable was created using question 10 of the survey. It asked, "In terms of your day-to-day operations, how often do you focus on emergency response planning?" It was measured using the response alternatives daily, weekly, monthly, yearly, or randomly.
3. Sense of threat—this variable was created using question 5 of the survey. It asked, "What has motivated the change to your emergency response planning to take place?" Respondents had a selection of 5 response alternatives and were asked to circle all that applied. Sense of threat was one of those alternatives. It was measured as a yes or no variable—yes if the respondents circled it or no if they did not.
4. Community interest—this variable was created using question 5 of the survey. It asked, "What has motivated the change to your emergency response planning to take place?" Respondents had a selection of 5 response alternatives and were asked to circle all that applied. Community interest was one of those alternatives. It was measured as a yes or no variable—yes if the respondents circled it or no if they did not.
5. Level of cooperation—this variable was created using question 11 of the survey. It asked, "What is the level of cooperation between your county and neighboring counties regarding Homeland Security planning?" This was measured using the response alternatives excellent, good, average, fair, poor/non-existent, no answer, or not necessary.

6. Level of commitment—this variable was created using questioning 13 of the survey. It asked, “What has been the level of commitment by your department heads in implementing new Homeland Security emergency response plans?” This was measured using a Likert scale 0 to 5 where 0 equal poor commitment and 5 equaled outstanding commitment.
7. Agricultural, water, information services, banking and financial, and energy infrastructure—these variables were created using question 9 of the survey. It asked, “please circle the three sectors of critical infrastructure in which your county has taken the least steps to improve preparedness.” Respondents had a selection of 8 response alternatives the six listed were most related to the other variables used to create the Homeland Security issues variable. All these alternatives were measured as a yes or no variable—yes if the respondents circled it or no if they did not.
8. Chemical, biological, bombings, radiological, agricultural, hostage taking and financial types of terror—these variables were created using question 14 of the survey that asked, “What types of terrorism is your county most or least prepared for?” These were measured using a Likert scale 0 to 4 where 0 equaled least prepared and 5 equaled most prepared.

All of these variables together received a Cronbach’s Alpha reliability score of 78.4 percent indicating that they are related to one another.

Limitations of the Study

There are several limitations of this study. The first limitation is in regards to this study’s response quality. Response quality refers to “the extent to which responses provide accurate and complete information,”(Johnson, 2001, p.291). This study utilized a mail survey, which is somewhat responsible for the study having problems regarding response quality. Some of those problems were the use an open-ended question, the fact that there was no researcher there to probe for additional information, that the survey could only ask a limited number of questions so there was no way to control the sequence the respondents answered the questions or control who answered, contributed or influenced the respondent’s answers. This last problem provides one of the greatest external threats to this study. There was some evidence

in categorizing the respondent's surveys that county judge executives may not have been the person filling out the survey—the evidence was inconclusive. This is a threat to the validity of the study because the truthfulness or quality of the response may vary drastically. If a director of emergency response or planning filled out the survey instead of the judge executive of the county their perspective of cooperation, commitment, and resistance to change may differ greatly than the perspective that may be shared among judges.

The next limitation was that the population being studied was small and only garnered a response rate of 63 percent. The small response rate is an internal validity threat because it reduces the ability to generalize across counties (it is important to note that regional response were proportional). There was another limitation in regards to the logistic regression. The Cronbach's Alpha test for reliability only received a score 78.4 percent. This percentage of reliability is below the recommended 80 percent score typically preferred in social science research.

The final limitation of this study is in measuring the dependent variable. As already discussed the dependent variable was based on a yes or no question which asked respondents if they had drastically changed their emergency response plans since the events of 9/11. What this question and the survey failed to capture was if respondents answered no, why they did so. Was it because they made changes to their emergency response plans prior to 9/11 causing them not to perceive a great threat in a post 9/11 world? Or are they currently changing their plans and answered no because they have not completed the change? These possibilities make it hard to

generalize about the counties that did not drastically change their emergency response plans.

ASSESSMENT

Change is difficult, but it is not change alone that is responsible for the problems and difficulties of undergoing organizational change. Rather, it is most often the ineffective management of change by those called upon to implement change that causes the stress and problems of undergoing change. Thus, most managers who are responsible for bringing about change do not understand the complexity of managing change. With this in mind, county judge executives were asked a series of questions on the ‘Changing Preparedness Survey’ aimed at modeling complex change management by local officials throughout Kentucky in changing their emergency response planning in response to the Department of Homeland Security. Those questions were 3d, 3e, 5, 22, and 31. Each question targeted a step of the Complex Change model. For example question 31 asked “did you use an action plan of some kind for guidance in making changes to your emergency response plans?” Respondents had to select from the response alternatives yes, no, or not applicable (See Appendix A for complete survey).

The responding sample of county judge executives was divided into two groups. Of the 76 county judge executives that responded to the survey, 44 county judge executives stated that they *had* drastically changed their emergency preparedness plans since the events of September 11, 2001. By stating that they had drastically changed their emergency response those judges are noting that they had embraced or planned change when dealing with emergency planning. 30 judges stated that no change had occurred and 2 respondents failed to answer the question. Those judges that stated that they had not drastically change their emergency

response plans may have answered that way for three reasons—they had changed pre-9/11, they were in the process, or they were rejecting/neglecting to change.

Counties that Changed

The 44 judges that had changed their emergency preparedness plans were placed into the Managing Complex Change model to assess how well they have or are managing the change process. Researchers Adams, Kingsley, and Smith state that if “people and organizations do not learn how to effectively manage change, they will find themselves managed by the changes,” (Adams, 2005).

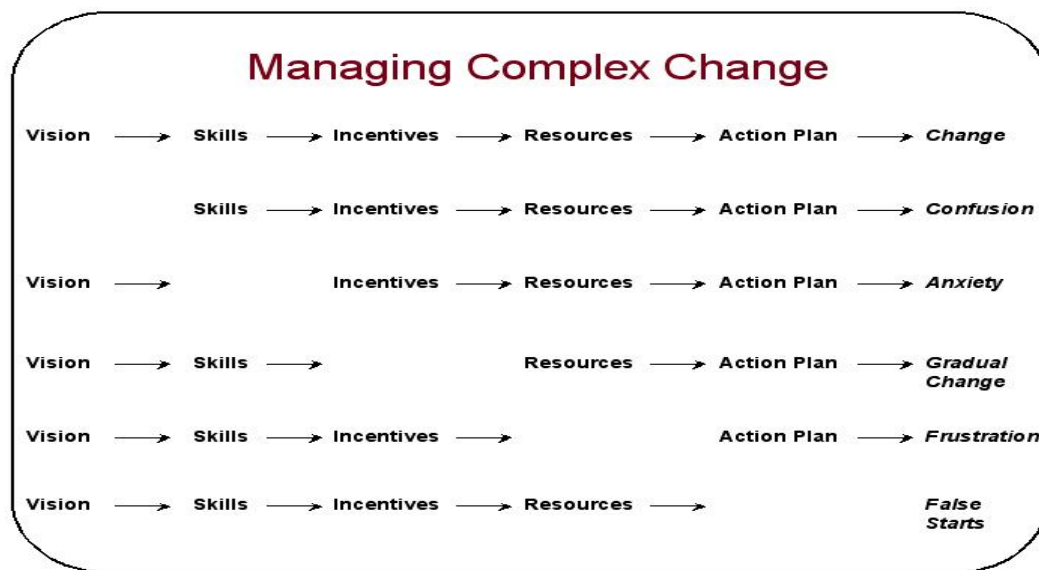


Figure 3: <http://elsmar.com/Discovering_Change/sld018.htm>

Δ Vision for Change

Vision provides a detailed overall picture of what the efforts of change will produce at the end of the change process. The vision is crucial to the change process because it describes what an organization is trying to change and what will be occurring among employees and management before, during and after change. When

the vision is clear and is developed by key stakeholders and is communicated to all levels of an organization “there is increased likelihood that people and institutions can find their places in the process and work in concert toward common goals,”(Adams, 2005). Of the 44 judges that changed, 32.6 percent answered no to question 22 of the survey indicating that they do not have a long-term vision of the change process. What this means, in terms of the Managing Complex Change model, is that 32.6 percent of judges executive and employees within the county could be experiencing confusion in attempting to change their emergency response plans. This conclusion is drawn from looking at Figure 3 and selecting the second row that is missing vision. By selecting that row and following it across from left to right the model predicts that confusion will when undergoing change without a vision.

Δ Skills for Change

The issue of having the necessary skills for change addresses the question of whether or not the people in an organization who are focusing on change “possess the abilities needed to make the vision happen at a high level of quality,” (Adams, 2005). When the necessary skills are lacking the people involved in the change process regularly find they experience stress and anxiety as Figure 3 illustrates. Based on responses to survey question 3d, only 19.6 percent of the 44 county judge executives that changed indicated that they do not have the necessary skills in changing their emergency response plans—80.4 percent had the necessary skills for change. Thus, stress and anxiety felt among the judges and county employees is minimal.

Δ Incentives for Change

Incentives are means to create ownership and buy-in among all players involved in the change process. In the end, incentives should answer two very important questions “why this vision...what’s in it for me, for those I serve, and for my organization?” (Adams, 2005). There were several incentives to assess county’s motivations for changing preparedness planning. Survey question 5 provided the basis to assess judge executive’s use of incentives to motivate change. Those incentives were sense of threat, financial/grants available, community interest, and financial reward. Of the 44 county judge executives that changed, 100 percent stated that incentives were used to motivate change. Of those incentives, 50 percent indicated sense of threat as being used, 97.9 percent indicated the use of grants available and financial reward, and that 50 percent indicated that community interest was an incentive for motivating change. What this means in the Managing Complex Change model is that there is not a lack of incentive for change so gradual change is not occurring.

Δ Resources for Change

Do we have what we need to do the job well is an important question in defining resources for change. Resources include materials or things like “program offerings, supplies, materials, equipment, space, funding, human capital, and certainly time,” (Adams, 2005). Change may occur even without adequate resources but it will take longer and will usually result in frustration among those involved. Based on the results of survey question 3e, 69.6 percent of county judges that changed are currently experiencing frustration. That is because those judges indicated limited resources as a major barrier they must overcome to bring about change.

Δ Action Plan for Change

A typical action plan provides direction and structure that people need to fulfill the change process. A well-conceived action plan, short- or long-term, will let “people know what their roles are, what they must do within those roles, by when, with whom, and how,” (Adams, 2005). When an action plan is absent in the change process false starts will occur. So far only 10.9 percent of the 44 county judge executives have experienced False Starts due to not having an action plan—84.8 percent of judges have and are utilizing an action plan. The use of action plans was based on respondents answer to survey question 31.

Δ Wrap Up

In assessing changes in emergency preparedness at the county level, the Managing Complex Change model indicates that of the 44 county judge executives that changed, 20.5 percent indicated that they had used and addressed all five steps in managing change. According to the model successful change should have occurred in those counties but evidence of this is inconclusive.

Counties that did NOT Change

Of the 76 county judges executive that responded to the survey, 30 county judge executives stated that they had *not* changed their emergency preparedness plans since the events of September 11, 2001. Those judge executives that answered were assessed independently from the 44 judges that stated that change had occurred and 2 respondents failed to answer the question. For comparison these counties were placed into the Managing Complex Change model. The two groups are also compared regarding their planning and training practices and their threat assessments.

Managing Complex Change

Δ Vision for Change

The 30 judges that did not change, 53.3 percent do not have a long-term vision of the change process. What this means is that if in terms of the Managing Complex Change model is that 53.3 percent of judge executives and employees within the county may be experiencing confusion.

Δ Skills for Change

Of the 30 county judge executives only 30 percent indicated not having the necessary skills in changing their emergency response plans—70 percent had the necessary skills for change. Thus, stress and anxiety felt among the judges and county employees may be minimal.

Δ Incentives for Change

Among the 30 county judge executives that did not change, 96.7 percent stated that incentives were used to motivate change. This is a strange concept—these judges believed they had not changed yet indicated the use of incentives in motivating change. What this means is that the change to their emergency preparedness plans may have occurred prior to the events of 9/11 or that incentives were being used to motivate change but drastic change has not yet occurred.

Of those incentives used 50 percent indicated a sense of threat being used, 90 percent indicated the use of financial/grants available, 36.7 percent indicated that community interest was an incentive and that only 10 percent indicated the use of financial reward as an incentive for motivating change. What this means in terms of

the Complex Change model is that there is not a lack of incentive so gradual change may not be occurring.

Δ Resources for Change

Currently 70 percent of county judges that did not change may be experiencing frustration. That is because those judges indicated limited resources as being a major barrier they have to overcome to bring about change. What is unclear is if limited resources is responsible for these counties indicating that drastic change did not occur.

Δ Action Plan for Change

When an action plan is absent in the change process false starts may occur as illustrated in Figure 3. So far only 26.7 percent of the 30 county judge executives may have experienced false starts due to not having an action plan—70 percent of judges have and are utilizing an action plan of some kind. This seems to be confusing. If these results are of those county judge executives that believed they had not drastically changed their emergency preparedness plans since 9/11 how could 70 percent have used an action plan? This may be explained similarly to the incentives step already discussed. These counties may have changed prior to 9/11 and utilized an action plan or they were using an action plan but may not have already drastically changed their emergency preparedness plans.

Planning and Training

In comparing the two groups, there are some similarities and differences in their actions toward planning and training. The two groups are similar in operational division of responsibility with the majority of counties reporting that their Director of

Emergency Response/Management is in charge of the county's response to a terrorist attack or emergency. Other similarities between the groups are in their emergency response practicing, use of outside help in practicing responses, and use of experts in working with their emergency response plans.

Table 1 Percent that Practiced Responding

Counties	Practiced	Used Non-County Personnel	Used Expert
Change	73.9	67.4	89.1
No Change	70.0	56.7	80.0

The two groups also have some differences in their planning and training practices as indicated by Table 1. In the counties that changed 71.7 percent of their first responders (fire and police) attend training, classes on terrorism, preparedness and new practices more than once a year. Of the counties that did not change, only 56 percent attend training and classes more than once a year. This statistic shows an almost 15 percent difference in the level of training first responders are receiving in the counties that did not change. This is unlike the counties that did change, which report that their first responders receiving training every two years or less at a rate of 2.2 percent and 6.5 percent respectfully. So while 71.1 percent of counties that did change, practice yearly, that statistic is overshadowed by their comparatively higher percentages of counties training less. Other differences exist between the two groups of counties in terms of how often they focus on emergency response planning in their day-to-day operations. While the differences between the two groups may have occurred by chance because they are not statistically significant, reporting such

findings is helpful in understanding efforts to change emergency preparedness planning at the county government level.

Table 2 Percentage that Focused on Emergency Response Planning

Counties	Daily	Weekly	Monthly	Yearly	Randomly
Change	15.2	23.9	30.4	8.7	19.6
No Change	16.7	30.0	16.7	20.0	16.7

Table 2 illustrates that there are some similarities and difference between those counties that changed and those that did not. While the groups are similar in the percentage of counties that focus of emergency response planning there are differences in those counties, which focus on planning yearly. Of the counties that did change, only 8.7 percent focused on emergency planning yearly while 20.0 percent of counties that did not change focused on planning on a yearly basis. This demonstrates that those counties that did change are focusing and addressing issues of emergency preparedness more regularly than those counties that did not change.

Threat Assessment

A threat assessment is an evaluation of the way in which people, businesses, property or infrastructure may be harmed, damaged or destroyed and the identification of those individuals and groups who may pose a threat, and the evaluation of the seriousness of such threats and the potential means. All counties in this study were asked if they had completed a threat assessment for their county and 71.7 percent of counties that changed and 66.7 percent of counties that did not change answered yes. What is interesting is that 82.6 percent of counties that changed and 83 percent of counties that did not change believe they are prepared for most emergency situations. While both groups believe they are prepared for most emergency

situations neither group believes that they are prepared extremely well for a terrorist attack; which demonstrates that most county leaders separate the two types of emergency situations. Of counties that changed, only 45.7 percent believed that they were prepared for a terrorist attack and in the counties that did not change only 26.7 percent believed they were prepared for a terrorist attack. While those counties that did change are almost double that of those that did not change in regards to preparedness for a terrorist attack, both groups are prepared at a relatively low percentage. Table 3 helps further demonstrate that those counties that changed appear to be more prepared for a terrorist attack than those counties that did not change because it breaks down the various types of terrorism and ranks each groups responses by least prepared and most prepared.

Table 3 Change No Change

Type of Terror	Least Prepared	Most Prepared	Type of Terror	Least Prepared	Most Prepared
Chemical & Hazardous	8.6 percent	63 percent	Chemical & Hazardous	16.7 percent	53.4 percent
Biological Agents	28.2 percent	30.4 percent	Biological Agents	46.7 percent	20 percent
Bombings	54 percent	10.9 percent	Bombings	53.3 percent	13.3 percent
Radiological	52.2 percent	15.2 percent	Radiological	56.7 percent	3.3 percent
Agricultural	41.3 percent	15.2 percent	Agricultural	50 percent	16.6 percent
Hostage Taking	23.9 percent	30.4 percent	Hostage Taking	50 percent	26.7 percent
Financial	45.7 percent	15.2 percent	Financial	53.3 percent	6.7 percent

***Note: Percentages for the ranking were combined (Respondents which ranked their preparedness level as a 0 or 1 were combined, the same is true for those that ranked preparedness as a 3 or 4). Counties, which ranked preparedness at level 2, were excluded.*

Most would believe that those counties that did not change would be overwhelmingly less prepared for various types of terror compared to those counties that did change. While this is true of some types of terror, Table 3 indicates that those counties that did not change appear to be more prepared for terrorist bombing and agricultural attacks than those counties that changed.

Logistic Regression Analysis

The logistic (dummy variable) regression analysis yielded several interesting and important results. The first most important result was the rate at which the model was able to predict that change in the dependent variable would occur based on the variations in the independent variables.

Table 4

Classification Table

Observed			Predicted		
			drastically		Percentage Correct
			no	yes	
Step 1	drastically changed	no yes	19 7	9 26	67.9 78.8
Overall					73.8

As Table 4 indicates, the regression model predicted that drastic change will occur 73.8 percent of the time given the various independent variables. (See page 22 for description of independent variables)

Δ Levels of Significance

When analyzing whether or not counties had drastically changed their emergency response plans, three independent variables proved to be significant at the 0.05 level. Significance level shows how likely a result is due to chance. A 0.05 significance level means that the results of this study have a 95 percent or higher possibility of the relationship being true and that the relationship is unlikely to have occurred by chance. The variables that had a 0.05 significance level this study were ‘Mitigation Practices’, ‘the level of resistance to change’ experienced and the ‘Western region.’

Table 5 **Variables in the Equation**

Independent Variables	B	S.E.	Wald	Df	Sig.	Exp(B)
Mitigation P.	0.108	0.048	4.948	1	0.026	1.114
Political B.	-1.489	0.967	2.369	1	0.124	0.226
Level Resist	-0.612	0.313	3.821	1	0.051	0.542
In Charge	0.632	0.377	2.817	1	0.093	1.882
Vision	-0.028	0.016	2.898	1	0.089	0.972
Personnel	-0.023	0.014	2.479	1	0.115	0.978
Bluegrass	-2.090	1.124	3.460	1	0.063	0.124
Western	-2.820	1.290	4.780	1	0.029	0.060
Eastern	-2.216	1.129	3.663	1	0.056	0.115

*Independent Variables defined in Methods section pg.#

Table 5 shows that the variable ‘Mitigation Practices’ was significant at a value of 0.026, the ‘Western region’ at 0.029 and the ‘level of resistance to change’ at 0.051, which is just at the 0.05 significance level. The variable ‘Mitigation Practices’ was, as mentioned in the methodology section of this capstone, created by combining eighteen other independent variables using Cronbach’s Alpha test and the variable SUM function in the SPSS statistical software. With the significance level of 0.026 the variable ‘Mitigation Practices,’ there is a 98.4 percent possibility that its relationship to the dependent variable (drastic change) is true and did not occur by chance. This means that the variable ‘Mitigation Practices’ may explain why some counties drastically changed their emergency response plans while other counties did not. Similarly the ‘Western region’ variable has a 98.1 percent possibility that being in or not being a county in the western region of Kentucky may explain why drastic change may or may not have occurred. There is a 94.9 percent possibility that the ‘level of resistance to change’ experienced by counties may explain why counties drastically changed or did not drastically change their emergency response planning.

There were four independent variables that were significant at a level of 0.10. This means that there was a 90 percent or higher possibility of their relationships

being true and that their relationships are unlikely to have occurred by chance. Those variables were ‘person in charge’ at a value of 0.093, ‘vision’ at a value of 0.089, ‘Bluegrass’ at a value of 0.063, and ‘Eastern’ at a value of 0.056. The variable ‘person in charge’ measured what county leader (judge executive, director of emergency response, police chief/sheriff, fire chief or other) was in charge of the counties response following an emergency. At a 0.093 level of significance drastic changes to the emergency response plans in a county and the person in charge of planning the relationship may not be caused by chance. Similarly, there is 91.1 percent possibility that the relationship between having a long-term written vision of where the counties would like their emergency response planning to be and whether or not drastic change to those plans occurred may be true. There is also a chance that the relationship of being in either the ‘Bluegrass’ (93.7%) or ‘Eastern’ (94.4%) regions of Kentucky and drastically changing county emergency response planning may be true. Having three independent variables at 95 percent and four independent variables at 90 percent significance level is important in helping to reject the null hypothesis proposed in this capstone. The null hypothesis is that matters relating to Homeland Security do not drive the need to change emergency response preparedness at the county government level. It is important to rejecting the null hypothesis because the significance levels demonstrate that matters relating to Homeland Security do appear to account for changes in the dependent variable among respondents.

Δ Coefficients

As a matter of course, the degree to which independent variables are related to the dependent variable is expressed in the correlation coefficient R , which is the square root of R -square. In regressions, R can assume values between 0 and 1. To interpret the direction of the relationship between variables, look at the signs (plus or minus) of the regression or B coefficients. If a B coefficient is positive, then the relationship of this variable with the dependent variable is positive; if the B coefficient is negative then the relationship is negative (Johnson, 2001, p.409). Of course, if the B coefficient is equal to 0 then there is no relationship between the variables.

Table 6

Independent Variable	B
Mitigation P.	0.108
Political B.	-1.489
Level Resist	-0.612
In Charge	0.632
Vision	-0.028
Personnel	-0.023
Bluegrass	-2.090
Western	-2.820
Eastern	-2.216

Looking at the variables in the in Table 6 one can see the regression B coefficients for each of the independent variables utilized. The regression coefficients reveal the nature of the relationships between the dependent and independent variables. It is important to keep in mind that each coefficient is influenced by the other variables in the regression model. Two or more variables may explain the same variation in the dependent variable. Therefore, each coefficient does not explain the total effect on the dependent variable of its corresponding variable, as it would if it were the only variable in the model. From Table 6 one can see that four independent variables do

not fall between 0 and 1: 'Political Barriers,' 'Bluegrass,' 'Western,' and 'Eastern' regions so their relationship cannot be determined. The independent variable 'Mitigation Practices' has a coefficient of 0.018, which is positive. This means that the greater the 'Mitigation Practices' are the chance of counties drastically changing their emergency response plans gets better. The variable 'person in charge' also had a positive relationship. According to this relationship there is a better chance that drastic change to emergency planning will occur depending on the person in charge of responding to an emergency.

The variable 'level of resistance' has a negative coefficient -0.612. This means that as the level of resistance to change experienced decreases the likeliness that drastic changes to emergency response plans will occur. Surprisingly the variable 'vision' had a negative relationship meaning that the less likely that counties had a long-term written vision of their emergency planning the more likely those counties were to drastically change their emergency response plan. While this is a surprising result it does not measure the success of that drastic change in overcoming the resisting forces of change.

If you look at the coefficients you will see that the regional values are all negative. What this tells us is that of the four regions plus the Pennyryle (the default region) that the data was collected from, counties located in the Pennyryle region are more likely to have drastically changed their emergency response plans based on the influence of the independent variables.

CONCLUSION AND RECOMMENDATION

Based on the results of this study there are some conclusions about organizational change and emergency response planning to be made. This study demonstrates that change in the dependent variable (drastic change to emergency response plans) can be explained 73.8 percent of the time by the independent variables ('Mitigation Practices,' 'level of resistance to change,' 'person in charge of emergency response,' long-term vision,' 'political barriers,' and 'regional location'); thus rejecting the null hypothesis. The null hypothesis stated that Homeland Security does not drive the need to change emergency response preparedness at the county government level. There were two research questions initially proposed by this research. Those questions were:

- 1. Has change in emergency response planning occurred at the county level?*
- 2. Are there regional differences present in terms of organizational change and emergency response planning?*

For the most part, based on the research conducted, change in emergency response planning has occurred at the county level in Kentucky answering the first research question. 44 county judge executives stated that they had drastically changed their county's emergency response plans since the events of 9/11. It is important to point out that less than half of the respondents indicated that no change occurred. This presents two very interesting questions for this study and also for the state and federal Departments of Homeland Security. What caused 30 county judge executives to not drastically change? What can influence or bring about change in those counties?

The results of the logistic regression analysis reveal that there are regional differences present in terms of organizational change and emergency response planning which answers the second research question. Counties in the Pennyrite region are more likely to have drastically changed their emergency response plans based on the influence of the independent variables which all relate to increasing emergency response. Counties regional location may also help explain why or why not drastic change to emergency response planning occurred in a particular county. There is a 98.1 percent (0.05 level of significance) possibility that being in or not being a county in the western region of Kentucky may explain why drastic change may or may not have occurred. Similarly, at a point 0.10 level of significance the relationship of being in either the Bluegrass (93.7 percent) or Eastern (94.4 percent) regions of Kentucky and drastically changing county emergency response planning may be true. Like the findings of the first research question the findings of the second research question leave some important questions that need to be asked. Are there reasons some regions are changing their response plans more than the others? Had counties in the different regions drastically changed their emergency response plans prior to the events of 9/11? Does the existence or the lack there of, make drastic change to emergency response planning more or less likely to occur in a particular region? It is by way of these questions that this study can make recommendations to emergency planners everywhere on how to successfully bring about change.

Recommendations

The first recommendation is the need for further research to be conducted. As the questions that were just posed pointed out, this project was not able to explain the regional differences or verify if change to emergency response plans had actually taken place. Further research needs to take into account the presence or lack thereof, of possible terrorist targets that could help explain why the regional differences occurred. Further research needs to be done to compare pre- and post-9/11 county emergency response plans in Kentucky to obtain a better understanding of what changes are taking place. Research also needs to be conducted upon county employees' individual attitudes toward changing emergency response plans to fully understand the resistance forces working against efforts to bring about change.

The second recommendation is to focus emergency response planning as an organizational change problem and to utilize different planned change models for different change agents. As this study has demonstrated using the Managing Complex Change model, there were only 20.5 percent of counties that believed they had drastically changed and in fact were utilizing all five steps in the model. Change agents at the county level could utilize this model because it allows them to see what aspects of planned change are necessary to make change occur and prevent poor outcomes of changing.

While the events of September 11, 2001, created a sense of urgency to change preparedness at the federal government level, there has been no substantial urgency placed on the county government level. This is because many county governments believe they are unlikely to be a target of terrorism. This is why recognizing that improving homeland security at the county level is an organizational change problem is

important. The Department of Homeland Security (DHS) can act as a change agent and attempt to utilize driving forces and resisting forces to offset counties' equilibriums and bring about change.

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CHANGING PREPAREDNESS
IN KENTUCKY

Please circle the most appropriate answer to the following questions that most accurately describes your county.

County's Willingness to Change

1) Since the aftermath of 9/11, how have issues/concerns of security for your county changed? a. Greatly b. Somewhat c. Very little d. Not at all
2) How did resistance to change affect your efforts to increase your county's Homeland Security Preparedness? None 0 1 2 3 4 5 Significantly
3) What barriers to change have your emergency response plans had to overcome? (circle all that apply) a. Political b. Financial c. Denial d. Limited skills e. Limited resources f. No barriers
4) What level of resistance did you experience when modifying your emergency response plans? None 0 1 2 3 4 5 Significantly
5) What has motivated the change to your emergency response planning to take place? (circle all that apply) a. Sense of Threat b. Financial/Grants Available c. Community Interest d. Financial Reward e. No motivation took place

Planning and Training

6) How often do your first responders (police & fire) attend training and classes on terrorism, preparedness and new practices? a. More than once a year b. Yearly c. Every two years d. Less
7) In the event of an emergency who is in charge of the county's response operations? a. Judge-Executive b. Director of Emergency Response c. Police Chief/Sheriff d. Fire Chief e. Other
8) In terms of emergency response plans, who has access to these plans? a. All citizens in county b. Only public employees c. Only upper county officials d. No one outside of law enforcement
9) Please circle the three sectors of critical infrastructure in which your county has taken the least steps to improve preparedness. a. Agriculture b. Water c. Public Health d. Emergency Services e. Government Services f. Information Services g. Energy h. Transportation i. Banking & Finances
10) In terms of your day-to-day operations, how often do you focus on emergency response planning? a. Daily b. Weekly c. Monthly d. Yearly e. Randomly
11) What is the level of cooperation between your county and neighboring counties regarding Homeland Security planning? a. Excellent b. Good c. Average d. Fair e. Poor/Non-existent f. No Answer g. Not Necessary
12) Did you anticipate cooperation from your neighboring counties? Yes No
13) What has been the level of commitment by your department heads in implementing new Homeland Security emergency response plans? Poor 0 1 2 3 4 5 Outstanding

SURVEY CONTINUES
ON BACK

**CHANGING PREPAREDNESS
IN KENTUCKY**

Threat Assessment

14) What types of terrorism is your county most or least prepared for?

Please circle the number that best describes your level of preparedness for:

Types of Terror	Least	1	2	3	Most
a. Chemical & Hazardous Material	0	1	2	3	4
b. Biological Agents	0	1	2	3	4
c. Bombings (Non-Nuclear)	0	1	2	3	4
d. Radiological Terrorism	0	1	2	3	4
e. Agricultural	0	1	2	3	4
f. Hostage Taking	0	1	2	3	4
g. Financial	0	1	2	3	4

Please circle your responses: **Yes No N/A**

15) Are you prepared for most emergency situations?	Y	N	N/A
16) Do you believe your county is prepared for a terrorist event?	Y	N	N/A
17) Have you completed a county threat assessment?	Y	N	N/A

Planning & Training

18) Have you practiced responding to a terrorist event?	Y	N	N/A
19) If you have practiced responding to a terrorist event, did non-county personnel participate in your practice emergency?	Y	N	N/A
20) Did you seek advice from experts when you changed your emergency response plans?	Y	N	N/A

Willingness to change

21) Have you drastically changed your emergency response plans since the events of 9/11?	Y	N	N/A
22) Do you have a written long-term vision for where you want your county's level of emergency preparedness?	Y	N	N/A
23) Did you anticipate resistance from county employees in changing preparedness plans?	Y	N	N/A
24) Are you still in the process of changing your county's emergency response plans?	Y	N	N/A
25) Did your thinking about emergency preparedness change after 9/11?	Y	N	N/A
26) Have you made personnel changes after completing your threat assessment?	Y	N	N/A
27) Before you changed your emergency response plans to meet Homeland Security requirements, were your employees comfortable with the current conditions?	Y	N	N/A
28) Has the possibility of a terrorist attack been dismissed by most of your employees because they believe it is unlikely your county will be attacked?	Y	N	N/A
29) Have your employees now recognized that changes needed to be made to your old emergency preparedness plans?	Y	N	N/A
30) Have all departments taken responsibility for their role in responding to an emergency?	Y	N	N/A
31) Did you use an action plan of some kind for guidance in making changes to your emergency response plans?	Y	N	N/A

32) What kind of resistance to change your emergency response preparedness plans have you experienced? (Internally and Externally)

**THANK YOU FOR
PARTICIPATING**

Regions of the Commonwealth of Kentucky

BLUEGRASS	PENNYRILE	WESTERN	EASTERN
ANDERSON	ADAIR	BALLARD	BATH
BOONE	ALLEN	BULITT	BELL
BOURBON	BARREN	BUTLER	BOYD
BOYLE	BRECKINRIDGE	CARLISE	BREATHITT
BRACKEN	CALDWELL	DAVISS	CARTER
CARROLL	CASEY	EDMONSON	CLAY
CLARK	CHRISTIAN	FULTON	ELLIOTT
FAYETTE	CLINTON	GRAVES	ESTILL
FLEMING	CRITTENDEN	GRAYSON	FLOYD
FRANKLIN	CUMBERLAND	HANCOCK	GREENUP
GALLATIN	GREEN	HENDERSON	HARLAN
GARRARD	HARDIN	HICKMAN	JACKSON
GRANT	HART	HOPKINS	JOHNSON
HARRISON	LARUE	MCCRACKEN	KNOTT
HENRY	LIVINGSTON	MCLEAN	KNOX
JEFFERSON	LOGAN	MARION	LAUREL
JESSAMINE	LYON	MARSHALL	LAWRENCE
KENTON	MEADE	MUHLENBERG	LEE
MASON	METCALFE	OHIO	LESLIE
MERCER	MONROE	UNION	LETCHER
MONTGOMERY	NELSON	WARREN	LEWIS
NICHOLAS	PULASKI	WEBSTER	LINCOLN
OLDHAM	RUSSELL		MCCREARY
OWEN	SIMPSON		MADISON
PENDLETON	TAYLOR		MAGOFFIN
ROBERTSON	TODD		MARTIN
SCOTT	TRIGG		MENIFEE
SHELBY			MORGAN
SPENCER			OWSLEY
TRIMBLE			PERRY
WASHINGTON			PIKE
WOODFORD			POWELL
			ROCKCASTLE
			ROWAN
			WAYNE
			WHITLEY
			WOLFE