# An Analysis of Perceptions of Managers in Manufacturing Operations of Personal Engagement in Pre-Event Natural Disaster Planning

**Dr. James L. Morrison**
University of Delaware
College of Arts and Sciences
Organizational Leadership
188-C Graham Hall, Newark, DE 19716, USA.

**Dr. G. Titi Oladunjouye**
Albany State University
Educational Leadership
ACAD224-P, Albany, GA 31705, USA.

## Abstract

*The findings of this study suggest that managers in the manufacturing sector appear to be bystanders in natural disaster preparedness planning. While they feel fairly confident themselves about being able to contend with a natural disaster, they are generally not actively engaged in planning process. Ironically, even though they exhibit a self-confidence in their individual ability to take care of themselves if a natural disaster struck, they are not satisfied with the thoroughness of their current natural disaster pre-event planning process*

**Keywords:** Natural Disaster Management, Natural Disaster Preparedness, Natural Disaster Planning

## *1.0 Introduction*

Natural disasters pose challenges for leaders, employees, customers, and suppliers, among others, in both the short-term and long-term. In the face of great uncertainty, there is generally little time in which to respond, and employee decisions on how to proceed during a natural disaster can become life/death issues. Therefore, the degree to which an organization undergoes planning in anticipation of enduring a natural disaster is likely to affect the success or failure of outcomes. Being involved in the planning process is critical since policies and practices in place will likely have limited effect if individuals are unaware of them or have little confidence in their effect. Personal involvement in pre-event planning for eliminating situations or conditions that interfere with an individual's capacity to survive a natural disaster maybe critical in generating practices that are meaningful and purposeful to the employees themselves.

Perceiving a natural disaster as a personal opportunity to get involved is also an act of engaging in a learning process. By creating a mindset that participation is important, managers will likely become more responsible for the success of their organization's preparedness. Individual capacity to enhance personal protection from a sudden onslaught of disaster events is made possible through working with others for generating practices that target specific needs. Therefore, making the transition from simply being aware to actively participating in a cause may enable employees to better respond in threatening circumstances. For this research, *a natural disaster is a sudden calamitous event that is the result of atmospheric and other geological imbalances that threaten the viability of the organization and is characterized by creating chaos, disruption of operations, confusion, and even death of employees.*

An intriguing question that is addressed here is how personally involved are managers in actually preparing both themselves and their organizations to react to a natural disaster, if one suddenly occurs. The target for data collection is employees in mid-management positions since they are most impacted upon if a natural disaster should strike a facility.

In this study, a basic assumption is that personal involvement may likely to be an integral component for developing a strategy to overcome complacency and a status quo framework that can easily undermine attempts to organize individuals into an effective natural disaster response team.

### 1.1 Dimensions to Natural Disaster Preparedness

Comprehensive natural disaster preparedness is typically classified in terms of pre- and post-event phases that include four continuous steps: mitigation, readiness, response, and recovery ( [Green, 2002], [Waugh, 2000], [Godschalk, 1991] and [Waugh and Hy, 1990]). The two pre-event phases are: (1) mitigation which is the planning ahead for the purpose of negating known consequences that are likely to occur should a natural disaster occur; and (2) readiness which are before-event planning tasks that engage workers in an effort to actively prepare them to use later when a natural disaster actually strikes. For this study, our focus is gathering pre-event data to analyze how personally aware and involved managers are in the process of organizational preparedness when mitigating the possible consequences of a catastrophic event, be it a tornado, earthquake, hurricane, flood, or any other sudden natural event.

## *2.0 Literature Review*

According to Pham and Swierczek (2006), an organization's incentive system that rewards employees who engage in planning and other work activities is directly related to the success or failure of motivating individuals to be active participants. To these two researchers, in natural disaster pre-event planning, employees typically are motivated by opportunities for growth, acquiring new skills, and mastering new situations. Accordingly, Entine (1999) suggests that it is important for leaders in organizations to have their employees' transition from being fearful of a natural crisis to perceiving it as a learning opportunity. Personal disposition in terms of actively seeking input into solving a problem differs depending on the working environment promoted in an organization. In other words, organizational rules and policies do not make a company automatically safe from the negative effects of a natural disaster. A major contributor to such planning would be those individuals who make practices actually happen through focus and effort (Entine, 1999).

The value assigned to natural disaster preparedness by leaders in an organization impacts upon expectations perceived by employees (James and Wooten, 2006). In other words, the organizational context in which a natural crisis may occur impacts upon the willingness of employees to personally become involved in the planning process. James and Wooten (2006) suggest that if the leader actively engages employees in the planning process, the result will reflect in more effective practices. Personal involvement in reducing the severity of a natural disaster plays an important role in designing strategies to address critical circumstances as they are anticipated to arise.

Another dimension to natural disaster organizational preparedness is that of enabling employees to become creative and innovative. According to Weick and Quinn (1999), without a sense of urgency delineated by senior leaders, organizational members are likely not to be sufficiently motivated to think and act creatively. Therefore, a leader who encourages employees to be an active part of preparedness discussions may develop creative practices which can enhance a company's reputation, gain traction with customers, and establish a 'brand' of trust and unity that elevates its presence in the industry in which it competes(Weick and Quinn, 1999).

In a study completed by Thomas Drabak (2001) at the University of Denver a decade ago, over half of the 118 businesses surveyed were ill prepared for the type of disaster they eventually confronted. From the viewpoint of the employees interviewed, there were perceived failures of their leadership, resulting in conflict and confusion among employees some ten years later, a study of more than 1,300 U.S. businesses commissioned by insurer FM Global found that 72 percent of those polled do not feel totally safe in their workplace during a natural disaster. Additionally, the study finds 71 percent of U.S. workers are not fully confident that neither their employer nor they can bounce back quickly from a natural disaster (Business News Daily, 2012). Interestingly, Symantec Corporation reported in its 2009 Small and Mid-Size Businesses (SMB) Disaster Preparedness Survey that 89 percent of their sample intends to create a formal disaster preparedness plan within the next six months. This is crucial as 77 percent of their sample also indicated that they lived in a region that is vulnerable to natural disasters (Symantec, 2009).

## *3.0 Statement of the Problem*

A review of the literature reveals that very little research has been conducted on just how personally committed are managers to being actively involved in putting together plans to address both personal and organizational needs. If not much has changed since the Symantec 2009 study, then a lack of personal commitment on the part of this working group may be the missing link in terms of generating a momentum to get things accomplished. Therefore, the basic purpose of this study was to gather data from managers since they have primary responsibility over daily operations and thus are most affected by the occurrence of a natural disaster. In analyzing personal awareness and involvement in more depth than previous research, the null hypothesis tested is that *the perceptions of those in mid-management positions in terms of an individual awareness and involvement in pre-event planning practices for natural disasters will not vary by length of employment, size of organization and region of the country.* Previous research appears to be extremely limited in analyzing the impact of these three variables upon perceptions of those who are subjected to any preparatory practices put into place. This research is designed to gain a multi-dimensional perspective of the personal involvement of managers in pre-event natural disaster preparedness.

### 3.1 Significance of the Problem

The personal commitment of managers, those who are in charge of leading and thus sustaining daily operations if a natural disaster should suddenly attack, is another factor that impacts upon the effectiveness of natural disaster planning. Has this factor been a crucial aspect in developing comprehensive natural disaster preparedness plans in recent years? Do managers perceive themselves as active strategic players, thus resulting in a systematic process of conscientious planning? Thus, this research is an attempt to gain access to the perceptions of those in mid-management positions in organizations, in this case the manufacturing sector, as to their awareness and personal commitment to natural disaster preparedness. Their perceptions add another dimension when considering how prepared we are to rebound from the ramifications of a natural disaster. If these individuals do not have a personal commitment to actively engage in natural disaster planning, this issue may need to be addressed to enhance momentum towards creating synergy among working groups within an organization. If they do have a personal commitment in this regard, then the outcomes of such plans should generate cohesiveness among employees, thus creating unified support. The area of manufacturing was selected since U.S. manufacturing employees' 12 million workers directly with another 5 million generated indirectly (Manufacturing Institute, 2009). Therefore, a sustained disruption in the manufacturing sector will likely have devastating consequences upon the American economy as a whole.

## *4.0 Methodology*

Data for the study was collected from those in mid-management positions in manufacturing organizations in the private sector within the borders of the United States. An online survey instrument designed through the University of Delaware Qualtrics Access protocol was utilized. In addition, a national data base consisting of the names, addresses, and email addresses of those in mid-management positions was used to establish a sample for the study.

### 4.1 Survey Design

The data gathering instrument focused on the pre-event disaster planning process; those specifically, to mitigation and organizational readiness to assure the safety of employees as well as to preserve property. The original survey form was completed by 9 managers from the Delaware-Pennsylvania-New Jersey Region. After getting feedback from the pilot study group, several items were deleted from the original instrument and several other items were revised. As the result of this process, the instrument has content validity. The final survey form consisted of six items related to personal awareness and involvement in natural disaster preparedness. A 5-point rating scale using strongly agree to strongly disagree was adopted for recording responses of those in the sample. The instrument was delivered online during a two-week span in January 2012.

### 4.2 Research Sample

Using the American Business National Data Base (2012) of 50,000 managers, a random sample of 1000 was selected. The sample was limited to only managers holding positions in organizations in the manufacturing sector within the United States.

This group was identified as a significant segment which had much at stake since they had manufacturing plants and other facilities which were subjected to natural disasters. Responses by 120 managers were received, representing a 12 percent return. Those in the sample were sent 2 reminders to complete the survey.

### 4.3 Statistical Measures

Using a 5-point rating nominal scale, the Kruskal-Wallis nonparametric independent samples test was performed on the three variables identified for study: length of employment, size of organization and region of the country. Due to the fact that there were few responses in the strongly agree and strongly disagree categories, responses to the 5-point scale were regrouped to +1 to signify agree or strongly agree; 0, for no opinion; and -1, for disagree or strongly disagree. In addition, a Cronbach Reliability Test was conducted in which a coefficient of .81 was calculated, which is well above the .70 generally required for accepting survey reliability.

## *5.0 Findings*

Of 120 managers in the study sample, 101were male and 19, female. In terms of the region of the country, the sample consisted of 54 managers from coastal states (those bordering either the Atlantic or Pacific Ocean or the Gulf of Mexico); 24, from North Central States (those in northern ½ of country); and 34, from South Central States (those in southern ½ of country). These regions were arbitrarily segmented by the researchers of the study (Table 1). In terms of educational level, 47 had a bachelor's degree, and 57, an advanced degree, with both degrees representing85 percent of the sample. However, 19 individuals have less than a baccalaureate degree. In terms of length of employment, 72 managers had 11 or more years of employment with their company and 48 had 10 years or less. Finally, only 17 in the sample were employed in companies having over 1000 employees whereas 103 were situated in either mid-size to small company with fewer employees (Table 1)

### 5.1 Overall Perceptions of Managers of Personal Involvement

Based upon the overall mean scores of perceptions of managers as to their personal familiarity and involvement in natural disaster preparedness, there appears to be a mixed reaction (Table 2). Using a rating scale where +1 indicated agreement, -1, disagreement; and 0, no opinion, the overall calculated means indicated that the managers were in agreement that they know whom to contact in the organization if a natural disaster occurred (m = +.76) and that they felt individually prepared to react to such an event (m=+.29). However, they also somewhat disagreed that they had familiarity with community response systems (m=-.20), made suggestions directly to senior administrators (m=-.15), had personally participated in a natural disaster planning exercise (m=-.54) and were satisfied with the plans put into place (m=-.38)

In analyzing responses of managers by region of country, there were generally no significant differences in perceptions. Using the Kruskal-Wallis Test for independent samples for comparing responses of 50 managers situated in coastal states, 24 in north-central states, and 46 in south-central states (Table 3), location of the manufacturing facilities where the managers were situated was not a significant factor in their perceptions.

In terms of size of the company, there were systematically significant differences in the perceptions of managers in terms of their individual familiarity and personal involvement in organizational natural disaster preparedness. The findings indicate that those managers in smaller manufacturing operations generally had more significant disagreement as to their personal confidence than those in larger organizations with one exception (Table 4). In terms of knowing the key administrator to contact in case of a direct strike of a natural disaster, managers in all organizations (small, mid-size and large) agreed to having knowledge of this person (m =+.77, m=+.66,m=+1.00 respectively). However, in regard to considering themselves prepared to react to a natural disaster, those managers in smaller organizations (m=-.19) disagreed that they were prepared while their counterparts in mid-size (m=+.60) and large (m =+.88) operations agreed that they felt prepared. Similarly, managers in smaller operations (m = -.66) disagreed that they were familiar with local community emergency response procedure whereas managers in medium (m = +.10) and large (m=+.35) operations were generally familiar. In terms of personal involvement in having put forth suggestions directly to senior administrators, again those managers in small operations (m= -.57) disagreed whereas those in mid-size (m=+.08) and large (m=+.47) had more positive views (Table 4). For the final two items relating to personally being involved in a natural disaster exercise within the past 12 months and being satisfied with current planning process, those managers in small operations held a significantly greater degree of disagreement than their counterparts.

However, all three groups in the sample indicated they had not participated in any special exercises (m=-.96,m=-.22, m=-.18) and that they had negative perceptions as to their current natural disaster planning process (m=.-66,m= -.06, m= -.47) (Table 4).

In terms of length of employment, there was a significant difference among the perceptions of managers as to their personal involvement in natural disaster preparedness for all seven items on the online survey questionnaire. Those managers with over 6 years of employment were generally significantly more in disagreement about their personal involvement in natural disaster preparedness than their counterparts (Table 5). For example, in terms of being individually prepared to react to a natural disaster, those with most employment experience with 16+ years of service (m=-.37)were in disagreement with that view while those with 0-5 years, 6-10 years, and 11-15 years of employment were in agreement (m = +.79, m=+.28, m=+.76 respectively. ) In terms of making suggestions directly to senior administrators to enhance pre-event planning practices, again those with 0-5 years of service were in agreement (m=+.79) while those with a greater number of years of service disagreed with this view (m=-.66, m=-.18, m=-.53 respectively). In addition, all managers no matter what their years of service (in 5-year increments) disagreed with the view that they are personally participated in company natural disaster exercises within the last 12 months (m=-.68, m=-.72, m=-.21, m=-.63). Finally, only managers with 0-5 years of service indicated that they were satisfied with the thoroughness of current natural disaster preparedness while those with 6-10, 11-15, and 16+ years of service disagreed (m = -.66, m= -.26, m= -.58 respectively) (Table 5).

## *6.0 Conclusions*

The findings of this study suggest that managers in the manufacturing sector appear to be bystanders in natural disaster preparedness planning. While they feel fairly confident themselves about being able to contend with a natural disaster, they are generally not actively engaged in organizational natural preparedness planning. In this regard, they indicate that they are not making suggestions directly to their senior leadership for enhancing their preparedness. Ironically, even though they exhibit self-confidence in their individual ability to take care of them if a natural disaster struck, they remain not satisfied with the thoroughness of their current natural disaster pre-event planning process. The location of the facility is not a significant factor in their perceptions. In terms of size of the company, those managers in smaller organizations exhibit significantly greater disagreement with the view that they are actively engaged in natural disaster preparedness planning than those associated with larger organizations. Interestingly, those with fewer years of employment with a company appear to demonstrate a lesser degree of disagreement as to participating in natural disaster preparedness planning. Therefore, the null hypothesis that *the perceptions of those in mid-management positions in terms of an individual awareness and involvement in pre-event planning practices for natural disasters will not vary by length of employment and size of organization is rejected with one exception.* In this regard, the location of the facility was not a significant factor.

However, since the managers in the study sample are confident that they know the administrator to contact if a natural disaster hits their organization, there appears to be a chain of command in effect which provides some confidence that they are somewhat prepared to deal with a natural disaster. However, in terms of a personal commitment to become actively involved, these same managers appear to be disengaged from the process. Therefore, in spite of a number of rather recent natural disasters within the borders of the United States, there appears to be a lack of personal involvement of managers in natural disaster preparedness. Based on the perceptions of those in mid-management positions identified in this study, the lack of personal involvement may be instrumental in a view that organizations are not really prepared. Thus, a change in personal behavior by instituting incentives to motivate managers to become active players in the process may be required. Though this study did not determine why such perceptions were generated, the findings do gives us a clue that something needs more attention. Determining the degree of input into the planning process by employees at the managerial level may provide some insight as to how effective those plans will actually be when they are put into practice if a sudden natural disaster actually occurs.

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## Appendix

**Table 1 – Demographics of the Sample**

| Characteristic | Item | No. |
|---|---|---|
| Region of Country - | | |
| | North/Central | 24 |
| | South/Central | 46 |
| | Coastal | 50 |
| Size of Organization - | | |
| | Small(0-250) | 53 |
| | Mid-Size (51-1000) | 50 |
| | Large (1001+) | 17 |
| Length of Employment - | | |
| | 0 -5 years | 19 |
| | 6-10 years | 29 |
| | 11-15 years | 34 |
| | 16+ years | 38 |

**Table 2 –Overall Frequency Distribution of Perceptions of Managers on Individual Familiarity and Involvement in Natural Disaster Preparedness (N = 120)**

| Personal Involvement | -1 | 0 | +1 | Mean[a] | Var. |
|---|---|---|---|---|---|
| I know exactly who to contact in our organization if a natl. disaster occurs. | 10 | 9 | 101 | +.76 | .353 |
| I consider myself individually prepared to react to a natural disaster. | 39 | 7 | 74 | +.29 | .868 |
| I am familiar with local community emergency response procedures. | 64 | 16 | 40 | -.20 | .834 |
| I have made suggestions directly to senior administrators to enhance pre-event practices. | 59 | 20 | 41 | -.15 | .818 |
| I have personally participated in a company natural disaster exercise within the past year. | 83 | 19 | 18 | -.54 | .553 |
| I am satisfied with the thoroughness of our current natl. disaster pre-event planning proc. | 81 | 4 | 35 | -.38 | .827 |

Note: -1 = disagree; 0 = no opinion; +1=agree

**Table 3 - Comparative Analysis of Perceptions of Managers on Individual Familiarity and Involvement in Natural Disaster Preparedness by Region of Country (N=120)**

| Item | Ob. Ex.[b] | Ob. Ex. | Ob. Ex. | Mean[c] | T-Stat[d] | Df | Signif.* |
|---|---|---|---|---|---|---|---|
| Know Key Admin. | | | | | | | |
| 1[a] | 7 (4.2) | 4 (13.8) | 39 (42.1) | +.64 | 3.050 | 2 | .218 |
| 2 | 0 (2.0) | 2 (1.80) | 22 (20.2) | +.92 | | | |
| 3 | 3 (3.8) | 3 (3.50) | 40 (38.7) | +.80 | | | |
| Individually Prepared | | | | | | | |
| 1 | 18 (16.7) | 3 (2.9) | 29 (30.8) | +.22 | 1.908 | 2 | .385 |
| 2 | 9 (7.8) | 2 (1.4) | 13 (14.8) | +.17 | | | |
| 3 | 12 (15.0) | 2 (2.7) | 32 (28.4) | +.43 | | | |
| Familiar/ Emergency Responses | | | | | | | |
| 1 | 32 (26.7) | 6 (6.7) | 12 (16.7) | -.40 | 4.203 | 2 | .122 |
| 2 | 12 (12.8) | 2 (3.2) | 10 (8.00) | -.08 | | | |
| 3 | 20 (24.5) | 8 (6.1) | 18 (15.3) | -.04 | | | |
| Made Suggestions to Admin. | | | | | | | |
| 1 | 29(24.6) | 5 (8.3) | 16 (17.1) | -.26 | 1.589 | 2 | .273 |
| 2 | 11 (11.8) | 5 (4.0) | 8 (8.2) | -.13 | | | |
| 3 | 19 (22.6) | 10 (7.7) | 17 (15.7) | -.04 | | | |
| Participated in Exercise | | | | | | | |
| 1 | 38 (34.6) | 8 (7.9) | 4 (7.5) | -.68 | 2.599 | 2 | .271 |
| 2 | 15 (16.6) | 3 (3.8) | 6 (3.6) | -.38 | | | |
| 3 | 30 (31.8) | 8 (7.3) | 8 (6.9) | -.48 | | | |
| Satisfied/Planning Process | | | | | | | |
| 1 | 37 (33.8) | 1 (1.7) | 12 (14.6) | -.50 | 1.511 | 2 | .470 |
| 2 | 15 (16.2) | 1 (0.8) | 8 (7.0) | -.29 | | | |
| 3 | 29 (31.1) | 2 (1.5) | 15 (13.4) | -.30 | | | |

**Note:** a- 1=50 coastal states; 2 = 24 north-central states; 3=46 south-central states
b-ob = observed; ex=expected
c-1 = agree; 2 = no opinion; -1 = disagree (rating scale)
d-Kruskal-Wallis Independent Samples Statistical Measure
*- Significance at the.05 level of confidence

**Table 4– A Comparative Analysis of Perceptions of Managers on Individual Familiarity and Involvement in Natural Disaster Preparedness by Size of Organizations (N=120)**

| Item | Ob. Ex.[b] | Ob. Ex. | Ob. Ex. | Mean[c] | T-Stat[d] | df | Signif.* |
|---|---|---|---|---|---|---|---|
| Know Key Admin. | | | | | | | |
| 1[a] | 3 (4.4) | 6 (4.0) | 44 (44.6) | +.77 | 3.985 | 2 | .136 |
| 2 | 7 (4.2) | 3 (3.7) | 40 (42.1) | +.66 | | | |
| 3 | 0 (1.4) | 0 (1.3) | 16 (14.3) | +1.00 | | | |
| Individually Prepared | | | | | | | |
| 1 | 29 (17.2) | 5 (3.1) | 19 (32.7) | -.19 | 27.247 | 2 | .000* |
| 2 | 9 (16.3) | 3 (2.9) | 39 (30.8) | +.60 | | | |
| 3 | 1 (5.5) | 0 (1.0) | 16 (10.5) | +.88 | | | |
| Familiar/ Emergency Responses | | | | | | | |
| 1 | 42 (28.3) | 4 (7.2) | 7 (17.7) | -.66 | 25.781 | 2 | .000* |
| 2 | 18 (26.7) | 9 (6.7) | 23 (16.7) | +.10 | | | |
| 3 | 4 (9.10) | 3 (2.3) | 10 (5.70) | +.35 | | | |
| Made Suggestions to Admin. | | | | | | | |
| 1 | 39 (26.1) | 5 (8.8) | 9 (18.1) | -.57 | 23.526 | 2 | .ooo* |
| 2 | 19 (24.6) | 8 (8.3) | 23 (17.1) | +.08 | | | |
| 3 | 1 (8.40) | 7 (2.8) | 9 (5.80) | +.47 | | | |
| Participated in Exercise | | | | | | | |
| 1 | 51 (36.7) | 2 (8.4) | 0 (8.0) | -.96 | 32/782 | 2 | .000* |
| 2 | 25 (34.6) | 11 (7.9) | 14 (7.5) | -.22 | | | |
| 3 | 7 (11.8) | 6 (2.7) | 4 (2.6) | -.18 | | | |
| Satisfied/ Planning Process | | | | | | | |
| 1 | 43 (35.8) | 2 (1.8) | 8 (15.5) | -.66 | 10.934 | 2 | .000* |
| 2 | 26 (33.8) | 1 (1.7) | 23 (14.6) | -.06 | | | |
| 3 | 12 (11.5) | 1 (0.6) | 4 (5.00) | -.47 | | | |

Note: a -1= 53 (0-250 employees); 2 = 50 (251-1000 employees); 3 = 17 (1000+ employees)
b -ob = observed; ex – expected
c - -1 = disagree; 0 = no opinion; +1 = agree (rating scale)
d -Kruskal-Wallis Independent Samples Statistical Measure
- Significance at the .05 level of confidence

**Table 5 – A Comparative Analysis of Perceptions of Managers on Individual Familiarity and Involvement in Natural Disaster Preparedness by Length of Employment (N=120)**

| Item | Ob. Ex.[b] | Ob. Ex. | Ob. Ex. | Mean[c] | T-Stat[d] | Df | Signif.* |
|---|---|---|---|---|---|---|---|
| Know Key Contact | | | | | | | |
| 1[a] | 0 (1.6) | 0 (1.4) | 19 (16.0) | +1.00 | 14.969 | 3 | .002* |
| 2 | 5 (2.4) | 6 (2.2) | 18 (24.4) | +.45 | | | |
| 3 | 2 (2.8) | 1 (2.6) | 31 (28.6) | +.85 | | | |
| 4 | 3 (3.2) | 2 (2.8) | 33 (32.0) | +.79 | | | |
| Individually Prepared | | | | | | | |
| 1 | 1 (6.2) | 2 (1.1) | 16 (11.7) | +.79 | 33.980 | 3 | .000* |
| 2 | 10 (9.4) | 1 (1.7) | 18 (17.9) | +.28 | | | |
| 3 | 4 (11.)) | 0 (2.0) | 30 (21.0) | +.76 | | | |
| 4 | 24 (12.4) | 4 (2.2) | 10 (23.4) | -.37 | | | |
| Familiar/ Emergency Responses | | | | | | | |
| 1 | 3 (10.1) | 5 (2.5) | 11 (6.30) | +.42 | 32.813 | 3 | .000* |
| 2 | 24 (15.5) | 2 (3.9) | 3 (9.70) | -.72 | | | |
| 3 | 10 (18.1) | 5 (4.5) | 19 (11.3) | +.26 | | | |
| 4 | 27 (20.3) | 4 (5.1) | 7 (12.7) | -.53 | | | |
| Made Suggestions to Admin. | | | | | | | |
| 1 | 0 (9.30) | 4 (3.2) | 15 (6.50) | +.79 | 42.022 | 3 | .000* |
| 2 | 23 (14.3) | 2 (4.8) | 4 (9.90) | -.66 | | | |
| 3 | 8 (16.7) | 12 (5.7) | 14 (11.6) | -.18 | | | |
| 4 | 28 (18.7) | 2 (6.3) | 8 (13.0) | -.53 | | | |
| Participated in Exercise | | | | | | | |
| 1 | 15 (13.1) | 2 (3.0) | 2 (2.8) | -.68 | 14.065 | 3 | .003* |
| 2 | 24 (20.1) | 2 (4.6) | 3 (4.4) | -.72 | | | |
| 3 | 14 (23.5) | 13 (5.4) | 7 (5.1) | -.21 | | | |
| 4 | 30 (26.3) | 2 (6.0) | 6 (5.7) | -.63 | | | |
| Satisfied/ Planning Proc. | | | | | | | |
| 1 | 7 (12.8) | 1 (0.6) | 11 (5.5) | .21 | 13.687 | 3 | .003* |
| 2 | 24 (19.6) | 0 (1.0) | 5 (8.5) | -.66 | | | |
| 3 | 20 (23.0) | 3 (1.1) | 11 (9.9) | -.26 | | | |
| 4 | 30 (25.7) | 0 (1.3) | 8 (11.1) | -.58 | | | |

Note: - a- *1 = 19 (0-5 years); 2 = 29 ( 6-10 years); 3 = 34 (11-15 years) ; 4 = 38 (16+ years)*
b - ob = observed; ex – expected
c --*1 =disagree; 0 = no opinion; +1 =agree (Rating Scale)*
d - Kruskal-Wallis Independent Samples Statistical Measure
c - *-1 =disagree; 0 = no opinion; +1 =agree (Rating Scale)*
* -Significance at .05 level of confidence