

*King County Office of Emergency Management
Research
Executive Summary
September 2007*

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Research Objectives

King County Office of Emergency Management (OEM) is responsible for coordinating and addressing the preparedness needs of the citizens during natural or man-made disasters and emergencies. OEM constantly endeavors to involve the citizens in its educational and outreach efforts. Part of this effort is to create an awareness and understanding among the citizens in order for them to pro-actively take steps to prepare for disasters and other unforeseen emergencies. In order to achieve this goal, from time to time, OEM has provided them informational tools needed for emergency preparedness.

In the past 3 years, Hebert Research Inc. has conducted a series of research studies for OEM to measure awareness and understand the nature and scope of citizen preparedness, their attitudes and needs towards emergency preparedness and various mass-mediated strategies for the purpose of maximizing citizen outreach in an efficient manner. This research particularly concerns itself with further exploring and understanding the underlying motivational triggers that could encourage citizens to pro-actively prepare for an emergency.

Additionally, this research also seeks to explore the extent to which people's ethnicity impacts and influences their attitudes towards various aspects of emergency preparedness. Findings seek to provide further insights into possible differences as a result of ethnic nuances. Other variables that this study attempted to analyze that could potentially impact levels of preparedness among people were those related to where they are in a given day (the place variable) and the time they spend at these places (the time variable).

The following research objectives were addressed for the King County OEM regarding emergency preparedness:

- To understand general attitudes of citizens towards emergency preparedness and their level of preparedness
- To understand and examine citizens' preparedness and involvement at the community level
- To understand and explore citizens' situational and attitudinal barriers inhibiting emergency preparedness
- To assess citizens' level of awareness about the 3 days 3 ways campaign
- To determine motivational triggers that would urge citizens to pro-actively prepare for a disaster

- To explore the message content and message spokesperson that could potentially motivate citizens to engage in preparedness activities at a personal and community level
- To determine and explore strategies beyond media strategies that would enable better preparedness among participants
- To evaluate the level of emergency preparedness of corporate entities and understand the gaps that can be meaningfully addressed through public outreach programs
- To specifically evaluate the aforementioned research objectives among Seattle residents separately, on behalf of the City of Seattle Office of Emergency Management wherever possible

Methodology

As part of a dual research strategy, Hebert Research used a mix of both qualitative and quantitative research methods. The qualitative phase consisted of a series of 6 focus groups and 12 key person interviews.

Focus Groups:

The main goal of the focus groups was to qualitatively explore insights regarding participants' attitudes towards emergency preparedness and what would motivate them to be prepared in the future. By observing and interacting with participants in a more "natural setting", useful insights regarding emergency preparedness were sought through discussions with various cultural and social groups that live in King County.

Six focus groups were conducted between June 6-26, 2007. There were a total of 85 participants, of which 41 participants were male and 44 were female. The ethnic distribution of the participants was as follows: Caucasian (46), Chinese/Chinese origin (19), Latino/Hispanic (17), African-American, Japanese, and Ukrainian (1 each). Participants from the Latino/Hispanic group were from Guatemala, Peru and Mexico. Four participants from this group lived in Downtown Seattle and another 4 in Burien. The rest of the participants were evenly spread in Beacon Hill, Northgate, the University District, and the Central area.

The insights that emerged as a result of the focus group discussions were very helpful in determining various key issues, concerns, questions, and hypotheses that were, in turn, tested for statistical significance, quantitatively. A summary of the key findings from the focus groups are detailed separately in this report. The findings from the focus groups are also referred to where applicable in this report.

Key Person Interviews:

In order to investigate the preparedness of some special entities such as institutes of higher education, hospitals and corporations that are in a critical position once emergencies arise, a series of key person interviews were conducted among security personnel/representatives at these entities. The second part of the qualitative phase was thus, a series of key person interviews that were conducted between September 7 and October 16, 2007.

These interviews were conducted among security and emergency personnel and were aimed at understanding the steps taken by these entities in implementing emergency preparedness plans, and at informing the Office of Emergency Management of potential ways to effectively communicate the importance of emergency preparedness to the staff and clients of these entities.

Interviews of security personnel and staff were conducted among the following 12 entities: 3 institutions of higher education; 1 large real estate and mall development company with high rise multi-use buildings in downtown Bellevue; 1 large Seattle sports stadium; 2 large Bellevue-based hospital; 1 large 24-hour grocery chain store; 1 large Northwest Internet and communications company; 1 large national retail store chain; and 1 mid-sized regional motel chain. A summary of the key findings from the key person interviews are detailed separately in this report.

Quantitative Research Method: Survey

Based on the key findings and insights that were learnt from the focus groups, a comprehensive survey questionnaire was developed that sought to understand King County residents' preparedness at home, work, while commuting and at places of entertainment in general.

The questionnaire, further, also sought to specifically explore and understand their motivations to pro-actively prepare for emergencies. Other related aspects that were addressed through the survey instrument were: residents' awareness of the 3days 3 ways campaign, its effectiveness in motivating residents to prepare for emergencies, their expectations of assistance from government and first respondent agencies during emergencies, and public forums and strategies that could assist in the effective dissemination and availability of an emergency kit.

From August 15, 2007 to September 7, 2007 Hebert Research interviewed a total sample of 883 King County residents on behalf of the King County OEM. The interviews were completed by computer-assisted telephone interviewing software technology. The incidence rate, or the percentage of individuals who qualified to take the survey was 58.9% and the final response rate was 31.9%.

The data from the interviews was analyzed using generally accepted univariate measures of central tendency and dispersion. In questions where multiple responses were indicated or in verbatim responses, the totals in the graphs or charts may be greater than 100% and only the most frequently stated responses may be reported. The questionnaire is attached in Appendix 1.

Additional methodological steps and procedures were undertaken in order to better understand and assess emergency preparedness behavior of the Seattle residents in particular. The sample for the survey was over-represented for Seattle and then statistically weighted in order to represent the actual population density proportion that exists in King County.

Also, regarding the recall and awareness of the 3days3ways campaign, once again, the distribution of the recall and awareness is shown geographically for the aforementioned Seattle neighborhoods and areas. This distribution provides an in depth understanding of the level of awareness among the residents of different geographic areas. Such information would help the Office of Emergency Management to focus efforts accordingly.

Sample Frame and Weighting

The sample frame consisted of a stratified probability sample of 883 King County residents. This strategy accounted for diversity of locations, population densities and ethnics/cultures within King County in a random manner. The sample was drawn from residents living in the different areas in King County, and the ethnic quotas were proportionately and randomly distributed among several large minority communities so that samples are truly representative of the citizenry of the region. The ethnic minorities that were represented proportionate to the population are as follows:

Table 1: Sample Allocation based on the King County Population Profile in 2006 Census data:

Ethnicity	King County Population (%)	Survey Sample	Sample (%)
Caucasian	71%	606	68.5%
Asian	13%	100	11.4%
Hispanic or Latino	7%	63	7.2%
African-American	6%	76	8.6%
Other	3%	38	4.3%
Total	100%	883	100%

Data Source: U.S. Census Bureau

The survey data was statistically weighted in order to be representative of the actual proportions of population density by area of residence and by ethnicity in King County. This was done by using the standard statistical weighting procedures in the Software Package for the Social Sciences (SPSS).

The weighted ethnicity data is as follows:

Ethnicity	Weighted ethnicity	%
Caucasian	623	70.5%
Asian	116	13.2%
Hispanic or Latino	66	7.5%
African-American	51	5.8%
Other	27	3%
Total	883	100%

The following geographic areas were included:

Geography
Seattle – Montlake
Seattle – Magnolia
Seattle – Ballard
Seattle - Queen Anne
Seattle - West Seattle
Seattle - Downtown high-rise residents
Other City of Seattle & North Seattle
Rainier Beach/Columbia
Madison Valley
International District
Central District
Northgate
Beacon Hill
Eastside Lake Washington waterfront /Other Eastside urban/suburban cities *
Eastside Rural Cities **
Incorporated South County Cities ***
Unincorporated Areas ****

*Included: Kirkland, Bellevue, Redmond, Mercer Island and Medina

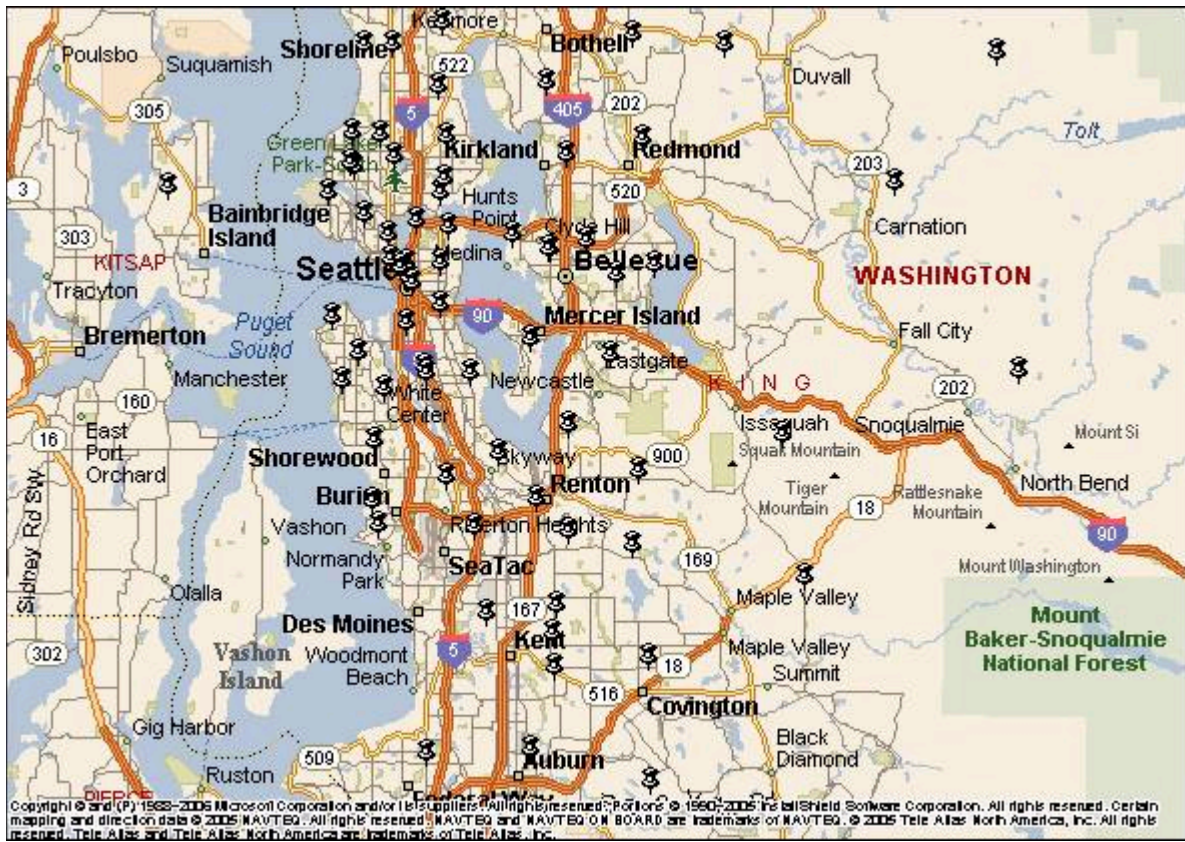
**Included: Woodenville, Carnation, Duwall, Fall City and Hobart

***Included: Kent, Renton, Auburn, Sea-Tac, Burien, Federal Way and Enumclaw

****Included: Cascade, Fairwood, Newcastle, Seahurst, Skyway, White Center

The geographic distribution of the aforementioned ethnic groups is attached in Appendix 3.

Respondents' Sampling Map



Research Controls and Procedures

Hebert Research applies a variety of controls to help ensure that the research and analysis offered is of the highest quality that can be provided within the research budget. The primary research controls that were employed in this study include the following:

Internal Peer Review

Hebert Research uses a “CERA” process—similar to academic peer review—to ensure that each study meets or exceeds rigorous quality control standards. Through this process, both junior and senior analysts review each analysis and offer critical feedback designed to reduce error and heighten the generalizability of the research.

Testing for Non-Response Error

Differences in responses between interviewers were tested to evaluate whether or not there was any significant bias between those with lower and those with higher response rates. These tests confirmed that non-response error did not significantly affect the findings.

Research Assistant Training and Internal Controls

Hebert Research uses experienced Research Assistants to conduct telephone interviews. Each Research Assistant is trained when they begin working with the firm and they receive additional project-specific training at the beginning of each study. This helps to ensure that experienced and competent staff is involved in all phases of the project, thereby reducing the probability of error.

Research Assistants were supervised by a highly experienced interviewer who oversees them throughout the data collection process. All data collection activities are overseen by the Director of Operations who keeps the Senior Research Analyst, Research Director, and President apprised of the status of the project. A Research Analyst regularly reviews incoming data to ensure that they are accurate to the best of the firm’s knowledge and are being gathered in a manner that is consistent with quality control standards. Moreover Research Assistants remain “blind” (i.e., unaware) to hypotheses that have been developed by Senior Analysts, Directors and the President. This ensures that conscious and unconscious bias does not have an effect on the data collection process.

Explanation of the Statistical Analyses Utilized

Multivariate analysis is a statistical analysis that analyzes the relationship between 2 or more variables. Multivariate analysis was conducted using various variables in order to examine differences among respondents according to specific pre- and post-classified segments, or groupings. The multivariates for the survey were as follows:

The analysis regarding attitudes and motivation towards emergency preparedness was conducted based on eight related factors: (a) ethnicity, (b) age, (c) home ownership (whether respondents rented or owned their homes), (d) marital status (married or single), (e) whether they had children, (f) whether they owned pets, (g) time spent at home, outside and on commuting, and (h) community organizational membership

By analyzing the data in this manner, statistically significant insights could be arrived at for each of the groups.

Examples of some questions that were specifically analyzed were as follows:

- *General preparedness*
- *Likelihood of purchasing an emergency kit for oneself and others*
- *Likely involvement with community organizations*
- *Awareness about the 3 days 3 ways campaign*
- *General attitude towards the campaign*

The likelihood scale was divided into:

- *Low (0-3)*
- *Medium (4-7)*
- *High (8-10)*

Multivariate analysis is an advanced statistical technique used in the testing of hypotheses and measuring the degree of association between variables. It involves Chi Square, analysis of variance and appropriate tests of independence and association.

Interpretations and inferences set forth in the analysis are intended to provide an independent statistical perspective. The statistical procedures utilized were applied with a 0.95 confidence level for estimating values and/or providing significant inferences for significantly different groups. This means that if a study were repeated 100 times, 95 times out of 100 the answers would vary by no more than the margin of error. A 0.05 significance level was used as the criterion to test hypotheses. At 0.05, there is no more than a 5% likelihood that the answers occurred by chance. The smaller the significance level, the less likely the answers occurred by chance – for example, a 0.001 means it is 1 in 1000 that answers occurred by chance. Multivariate findings, when they emerged significant and meaningful, have been indicated at the end of each section.

Discriminant analysis is a statistical equation that would predicts (or “discriminates”) group membership based on key underlying variables such as age, ethnicity, marital status, awareness about 3 days 3 ways, etc. This analysis is more powerful than a simple multivariate analysis it would examine a group of the aforementioned variables together and would select the best discriminating variables that explain important factors of: (a) motivation towards preparedness and (b) levels of preparedness at home, work, while commuting and while at places of entertainment. This equation is a powerful tool communication and motivational strategy formulation.

Correlation analysis was also conducted. A statistical correlation analysis measures the strength of relationship between two variables. It also examines the predictability of one variable upon another. The formula of a Correlation Coefficient (r) is as follows:

$$\rho_{x,y} = \frac{\text{cov}(x,y)}{\sigma_x \sigma_y}$$

Correlations are stochastic, that is they occur at one point in time, and involve determining linear dependence, as opposed to data relationships on a curve or other function. Among statisticians, r values from 0.50 – 1.00 are considered to be significantly large correlations.

Interpretation of Correlations:

0.10 – 0.29 = small correlation

0.30 – 0.49 = medium correlation

0.50 – 1.00 = large correlation

A negative sign with its correlation value indicates the relationship runs in the opposite direction. Likewise, a positive sign with a correlation value indicates that the relationship between the variables run in the same direction.

The following correlation analysis matrices were created and analyzed:

- Motivational triggers towards preparedness based on ethnicity
- Appeal of message spokespersons by ethnicity

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Respondents' Demographic Profile

More than half the respondents (65.5%) were female and 34.5% were male. The following tables describe the demographic profile of the survey respondents.

Ethnicity:

About three quarter (70.5%) of the respondents were Caucasian. The ethnic break-up of the respondents was as follows:

Ethnicity	%
Caucasian (not Hispanic)	70.5%
Asian	13.2%
Hispanic or Latino	7.5%
African-American	5.8%
Other	3%
Total	100%

Age:

The age-range of the respondents was uniformly distributed. The table below sums up the respondents' age:

Age	%
25-24 years	13.9%
35-44 years	20.7%
45-54 years	13.7%
55-65 years	22.6%
65 or older	29.2%
Total	100%

Marital status:

More than half (60.5%) the respondents were married or were in a committed relationship. More than a quarter of them (36.1%) were single, divorced or widowed. However, only 35.9% had children living in their house. Most respondents (60.6%) did not.

Two additional variables were included in respondents' demographic profile: home ownership status and the presence of pets in the house. These variables were included to analyze if children and pets impacted respondents' motivation towards preparedness or not.

In all 35.9% respondents had children living in their house and 60.6% did not. About three-quarters of the respondents (69.6%) owned the home they lived in and about half of the respondents (48.6%) had pets in the house.

A Typical Week

In order to gain a better understanding of the respondents' general lifestyle habits, data was gathered on the amount of time they spent at home, at work, on commuting and at places of entertainment.

The purpose of this information was to correlate it to their levels of preparedness at different times of the day in different places. This information further proved to be helpful in determining and exploring insights into arriving at respondents' preparedness activities and motivations.

About a quarter of the respondents (22.3%) worked from home and the remaining three quarter (74.8%) worked outside. The following table provides a summary of the amount of time respondents spent at home, work, while commuting and at places of entertainment (such as the movies, shopping, etc) during a week:

Area	Hours spent per week
Home	101.1 hours
Work	24.7 hours
Commuting	5.4 hours
Places of entertainment	10.8 hours

Respondents were then asked to rate on a 0-10 (not at all prepared to very prepared) scale how prepared they felt for a disaster/emergency when they were at each of these places. The preparedness scale was operationalized for the respondents as: “10 is having food, medical supplies, water and clothes, for at least 3-5 days, having extra batteries and a flashlight; and 0 is having none of these things”.

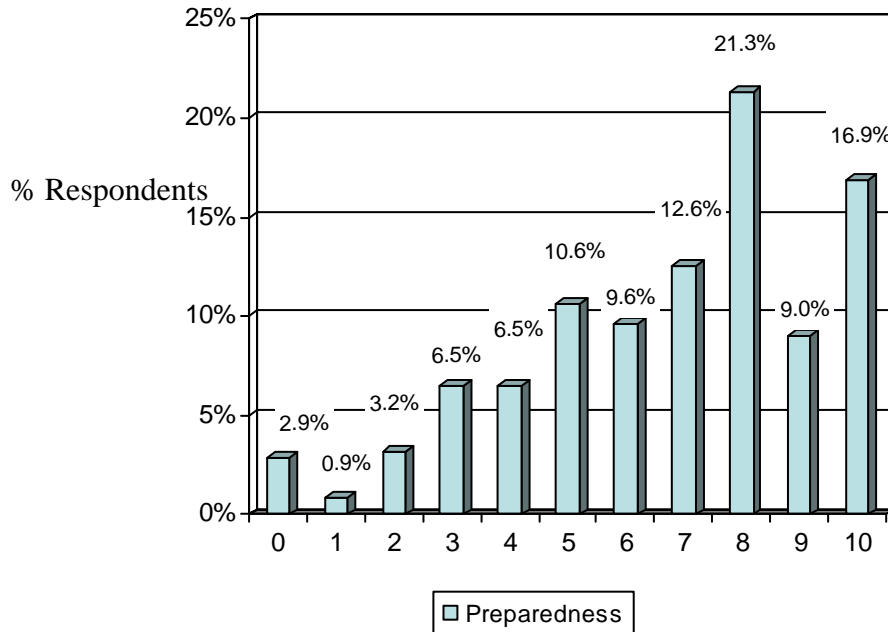
This operational definition was arrived upon based on the focus group findings, where respondents indicated having these items most frequently in order to prepare for an emergency/disaster.

The next few sections discuss respondents' levels of preparedness at home, work, while commuting and at places of entertainment.

Preparedness at Home

The average mean rating for being prepared at home for a disaster/emergency was moderately high at 6.72. About half the respondents (47.2%) gave a high rating between 8 and 10.

“How equipped/prepared do you think you might be for a disaster/emergency at home?”



Further analysis:

A multivariate analysis was conducted in order to test if any of the following factors would impact emergency preparedness at home: marital status, presence of pets and children at home, age, and whether respondents rent or own their homes.

It was found that home ownership impacted level of preparedness at home, where respondents who owned their homes were better prepared than those who rented their homes.

The table below sums up the results:

	Preparedness at Home		
	0 - 3 (Low)	4 - 7 (Medium)	8 - 10 (High)
Own	10.6%	39.8%	49.6%
Rent	22.2%	37.7%	40.1%

*(Results are significant at $p=.003$,
Cramer's $V=.11$)*

A discriminant analysis was also conducted in order to understand how the following variables predicted emergency preparedness at home: (a) how motivating respondents

think the 3 days 3 ways campaign is; (b) likelihood of purchasing a pre-packaged emergency kit for yourself and for someone else; (c) likelihood of appreciating an emergency kit by a realtor on purchasing a house; (d) preparedness at work, while commuting and at places of entertainment.

A negative discriminant score predicts an inverse/opposite reaction. As seen in the table below, the more the respondents were prepared at home for an emergency, the less likely are they to buy an emergency kit (discriminant score = -.323). On the other hand, the more the respondents were prepared at home for an emergency, the more likely are they to be prepared for emergencies while commuting (discriminant score = .72).

The table below sums up the responses:

Preparedness variable	Discriminant coefficient
Preparedness while commuting	0.721
Doability of preparing a kit for 3 days	0.253
Preparedness at work / school / university	0.193
Appreciation towards a realtor who gifted an emergency kit	0.188
Preparedness at places of entertainment	0.049
Likelihood of buying an emergency kit for someone else	-0.007
Motivation attached to 3 days 3 ways	-0.011
Likelihood of buying an emergency kit with supplies for 3 days in the market	-0.109
Likelihood of purchasing an emergency kit at a public area in your neighborhood	-0.323
Change in perception of a store if it promoted emergency preparedness	-0.343

Results are significant at $p=.000$; Eigenvalue =.234; correlation = .436; Wilks' Lambda =.810

Another discriminant analysis was conducted to determine how various spokespersons advocating emergency preparedness and emotional motivator triggers like fear and responsibility towards loved ones would predict emergency preparedness at home. The table below sums up the results:

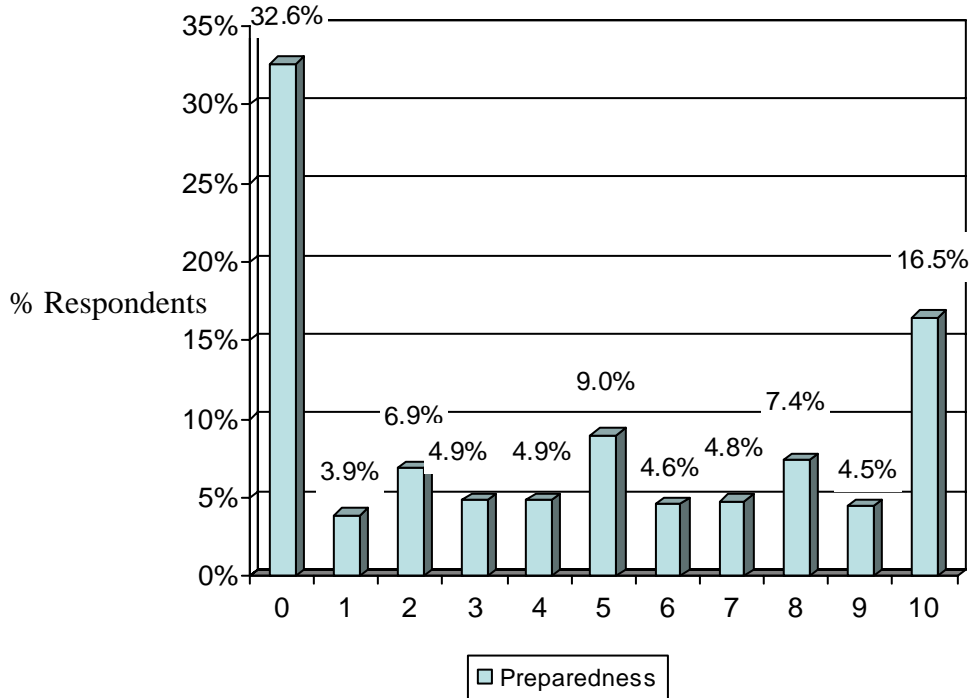
Motivational trigger predicting emergency preparedness at home	Discriminant coefficient
The need to be self sufficient / self reliant	0.534
Firefighters, police, or EMS officials as spokespersons of emergency preparedness	0.420
News about disasters	0.272
Celebrities, such as actors or sports figures as spokespersons of emergency preparedness	0.263
Personal experience of suffering a disaster	0.214
Responsibility towards family and loved ones	0.195
The need to be in a position to help others	0.195
The need to have peace of mind in case of a disaster	0.182
Disabled as spokespersons of emergency preparedness	0.115
Officials from local government, such as county Office of Emergency Management as spokespersons of emergency preparedness	0.113
The need for security in case of a disaster	0.095
Pre-warned about a disaster	0.043
Community leaders (Church pastors, etc.) as spokespersons of emergency preparedness	0.030
TV newscasters as spokespersons of emergency preparedness	-0.006
Repeated advertisements/ messages about the need to be prepared	-0.022
Promotional and public events like fairs	-0.049
Prevent harm or loss of a loved one	-0.092
Children as spokespersons of emergency preparedness	-0.105
Elderly as spokespersons of emergency preparedness	-0.109
Anniversary dates of previous disasters	-0.129
Fear	-0.149
The availability of convenient emergency kits in the market	-0.166
Survivors of disasters as spokespersons of emergency preparedness	-0.174
Frequent and repeated reminders from government agencies	-0.199
Seasonal reminders	-0.241
Elected officials (state & local) as spokespersons of emergency preparedness	-0.279
Representatives from the American Red Cross	-0.357

Results are significant at $p=.000$; Eigenvalue=.103; correlations=.305; Wilks' Lambda = .907

Preparedness at Work

The average mean rating for being prepared at work for a disaster/emergency was moderate at 4.23. Only about one-third of the respondents (28.5%) felt highly prepared (8-10) at their work place. It was also found that 32.6% of the respondents did not feel prepared at work at all and gave a rating of 0.

“How equipped/prepared do you think you might be for a disaster/emergency at your work place?”



Further a multivariate analysis was conducted in order to test if any of the following factors would impact emergency preparedness at home: marital status, presence of pets and children at home, age, and whether respondents rent or own their homes.

Significant differences were noted in the case of age and the presence of children at home, where these two factors impacted preparedness at the workplace.

The table on the next page sums up the results.

It was found that respondents between the age of 45-54 years were most prepared (8-10) at their work place. Seniors (65 years or older) were found to be least prepared for disasters/emergencies at their place of work.

Age	Prepared at work		
	0 - 3 (Low)	4 - 7 (Medium)	8 - 10 (High)
18-24	21.7%	47.8%	30.4%
% respondents			
25-34	40.7%	32.2%	27.1%
% respondents			
35-44	40.2%	27.6%	32.2%
% respondents			
45-54	39.5%	17.7%	42.7%
% respondents			
55-64	53.4%	18.2%	28.4%
% respondents			
65 or older	81.7%	11.0%	7.3%
% respondents			

(Results are significant at $p=.000$, Cramer's $V = .28$)

It was also found that those respondents who had the presence of children at home were more prepared at their work place than those who had no children at home. The results are as follows:

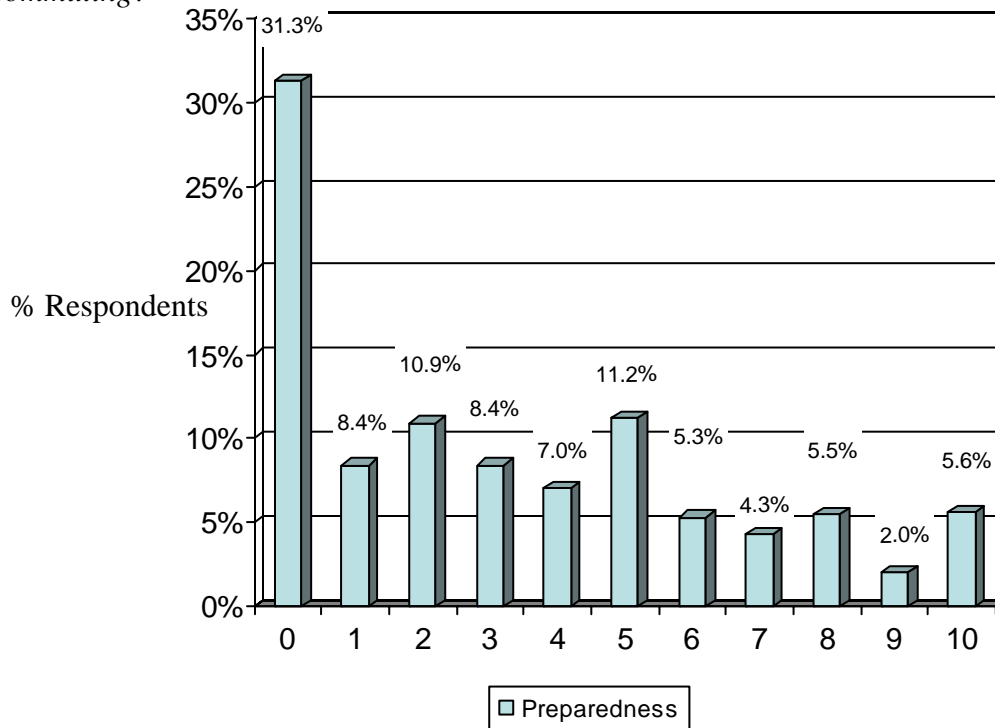
Children at home	Prepared at work		
	0 - 3 (Low)	4 - 7 (Medium)	8 - 10 (High)
Yes	38.8%	24.6%	36.6%
No	54.5%	21.6%	24.0%

(Results are significant at $p=.003$, Cramer's $V = .11$)

Preparedness While Commuting

The mean rating for being prepared for a disaster/emergency while commuting was low at 3.2. Only 13.1% of the respondents felt highly prepared (8-10) for a disaster/emergency while commuting and half the respondents (50.6%) reported to be minimally prepared (0-3).

“How equipped/prepared do you think you might be for a disaster/emergency while commuting?”



On conducting a multivariate analyses, significant differences were noted in the case of marital status. The table on the next page sums up the results.

	Prepared while commuting		
	0 - 3 (Low)	4 - 7 (Medium)	8 - 10 (High)
Single/divorced/widowed % Responses	64.6%	20.5%	14.9%
Married/committed relationship % Responses	56.2%	32.4%	11.4%

(Results are significant at $p=.003$)

It was found that more single people were highly prepared (8-10) than married/committed respondents.

A multivariate analysis was also conducted by ethnicity against preparedness at home, at work, while commuting and at places of entertainment, to see if there are any differences in emergency preparedness by the 4 ethnicities: Caucasian, Hispanic/Latino, Asian and African American.

Significant differences by ethnicity were noted in the case of preparedness while commuting. The table below sums up the results:

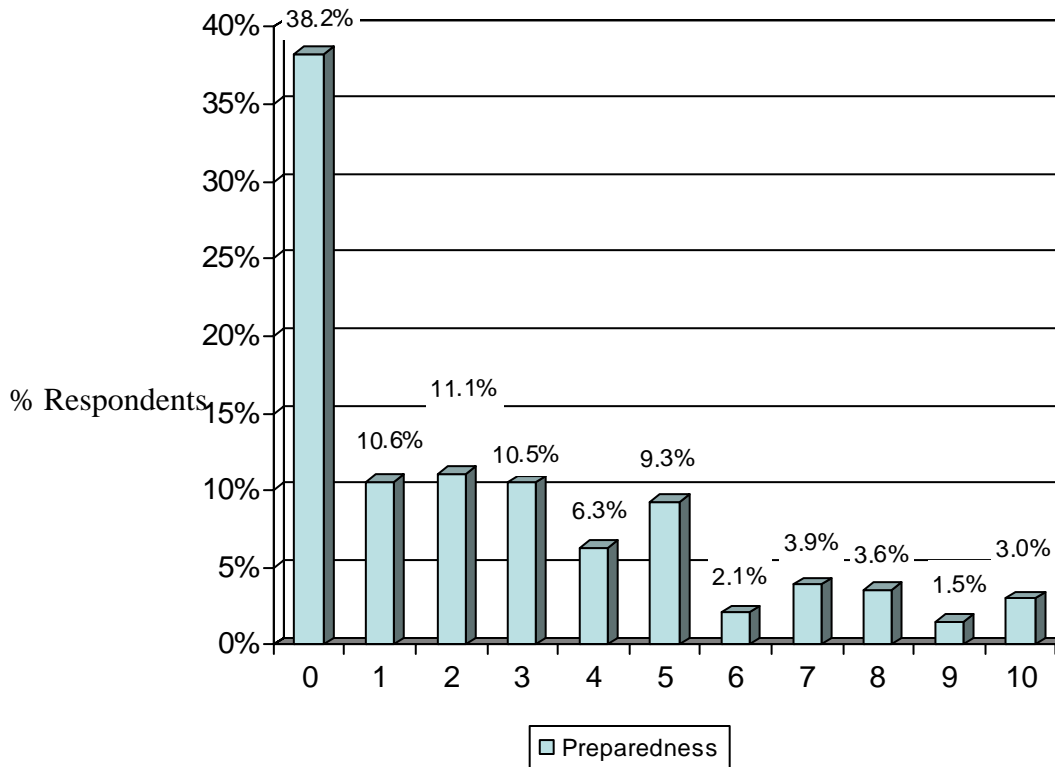
Ethnicity	Prepared while commuting (Mean rating)
Caucasian	2.97
Hispanic/Latino	2.95
Asian	3.86
African American	4.07

(Results are significant at $p=.006$, Eta square= .02)

Preparedness at Places of Entertainment

The mean rating for being prepared for a disaster/emergency at places of entertainment like at the mall/movies was very low at 2.48. Less than one-tenth of the respondents (8.1%) felt highly prepared (8-10) for a disaster/emergency while commuting and more than half the respondents (59.8%) felt minimally prepared (0-3).

“How equipped/prepared do you think you might be for a disaster/emergency at places of entertainment?”



Further a multivariate analysis was conducted in order to test if any of the following factors would impact emergency preparedness at home: marital status, presence of pets and children at home, age, and whether respondents rent or own their homes.

Significant differences were noted in the case of age and home ownership. Respondents between the age of 18-24 years were most prepared (8-10) at places of entertainment than respondents in other age groups. Seniors (65 years or older) reported to be least prepared at places of entertainment.

The table on the next page sums up the results.

	Prepared at place of entertainment		
	0 - 3 (Low)	4 - 7 (Medium)	8 - 10 (High)
18-24	37.5%	41.7%	20.8%
25-34	70.7%	28.0%	1.3%
35-44	72.8%	20.8%	6.4%
45-54	72.4%	22.4%	5.3%
55-64	73.8%	15.4%	10.8%
65 or older	72.4%	18.6%	9.0%

*(Results are significant at $p=.001$,
Cramer's $V = .16$)*

Significant differences were also noted with respect to home ownership, where those respondents who rented were more prepared for emergencies at places of entertainment than those who owned their home.

The results are summed up as follows:

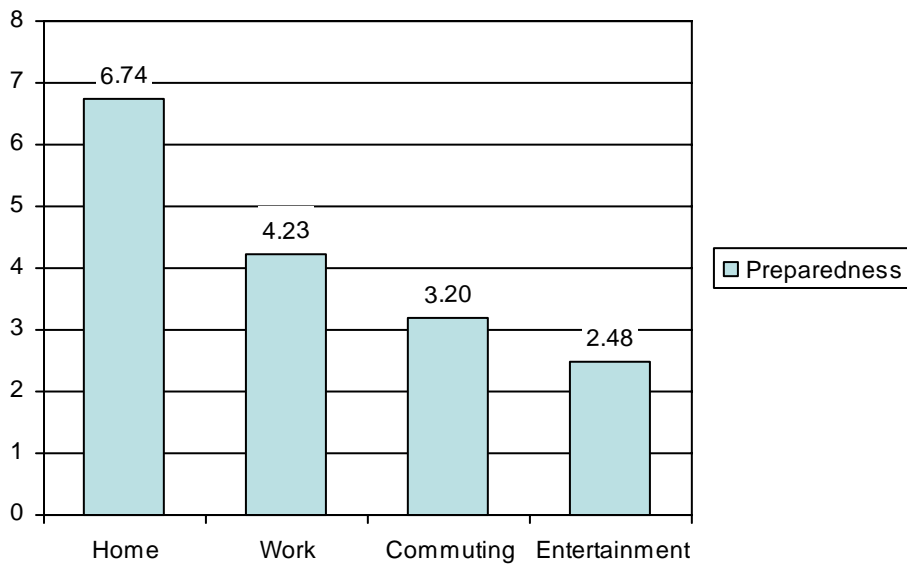
	Prepared at place of entertainment		
	0 - 3 (Low)	4 - 7 (Medium)	8 - 10 (High)
Own	73.2%	20.9%	5.9%
Rent	64.6%	23.8%	11.6%

*(Results are significant at $p=.001$,
Cramer's $V = .11$)*

To Sum Up

While respondents in general felt they were better prepared for emergencies at home, they felt less prepared at work, while commuting and at places of entertainment (in that order). There is, therefore, need to create awareness about being prepared for emergencies at places outside of the home.

The graph below sums up the mean emergency preparedness scores of the respondents at the aforementioned places:



Community Involvement & the Level of Preparedness

Respondents were also asked a series of questions that sought to understand their level of involvement at the community level.

This was done in order to test the following hypothesis: the greater the involvement with a community organization, the greater the preparedness for emergencies in general.

Respondents were asked to rate on a 0-10 scale, how involved they were with the following community organizations:

- Neighborhood community (e.g. community center, etc.)/ Neighborhood organizations like member of the home owners' association, neighborhood watch group, etc.
- Church
- Any Cultural/ethnic group
- Professional organization like the Rotary club, school, etc.

A multivariate analysis was also conducted among 3 levels of involvement: low involvement (0-3), medium involvement (4-7) and high involvement (8-10) with the various aforementioned community organizations, and the respondents' level of preparedness at home, at work, while commuting and at places of entertainment.

In general, significant differences were found between the levels of involvement with various community organizations and the level of preparedness at home, work, while commuting and at places of entertainment. It was found that as involvement increased from low to high, so did their level of preparedness.

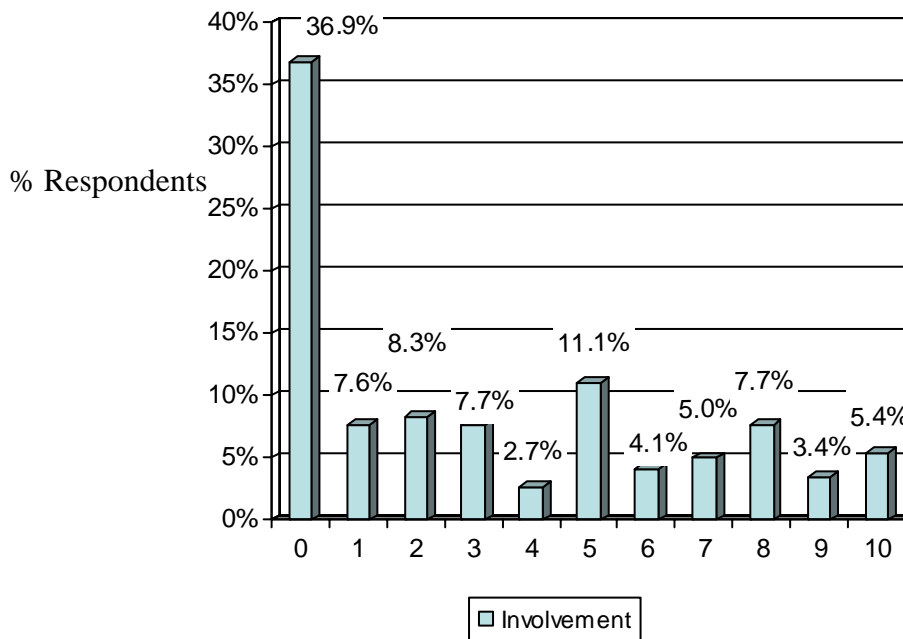
The results are summed up and further detailed in the subsequent sections.

Involvement with Neighborhood Organizations and Emergency Preparedness

The average mean for involvement at a neighborhood community organization such as watch groups and home owners' associations was generally low at 3.2.

Only 16.6% of the respondents gave a high rating (8-10) of being involved with their neighborhood community organizations.

“On a scale from 0-10, where 10 is “highly involved” and 0 is “not involved at all”, how involved would you say you are with your neighborhood community [E.g. community center]/ Neighborhood organizations like HOA/neighborhood watch groups?”



However, on conducting a multivariate analysis, significant differences were found between the level of involvement and preparedness at home.

It was found that the more the respondents were involved with neighborhood organizations, the more prepared for a disaster they felt at home.

The table on the next page sums up the results.

Level of involvement with neighborhood community organizations	Prepared for an emergency at home (Mean scores)
0-3	6.33
4-7	7.22
8-10	7.48

(Result significant at $p=.000$; Eta square = .04)

A similar relationship was also found between involvement with neighborhood organizations and prepared for emergencies at work, even though the mean scores as reported in the table below are moderate.

Level of involvement with neighborhood community organizations	Prepared for an emergency at work (Mean scores)
0-3	3.81
4-7	4.51
8-10	5.36

(Result significant at $p=.005$; Eta square = .02)

Similarly moderate to low mean preparedness scores were found in the case of commuting and in places of entertainment. The interesting finding, nonetheless, is that greater the involvement with neighborhood organization, greater the preparedness at home, at work, while commuting and at places of entertainment.

The next 2 tables sum up the findings for preparedness when commuting and at places of entertainment:

Level of involvement with neighborhood community organizations	Prepared for an emergency while commuting (Mean scores)
0-3	2.65
4-7	3.93
8-10	4.25

(Result significant at $p=.000$; Eta square = .05)

Level of involvement with neighborhood community organizations	Prepared for an emergency at place of entertainment (Mean scores)
0-3	2.13
4-7	2.93
8-10	3.19

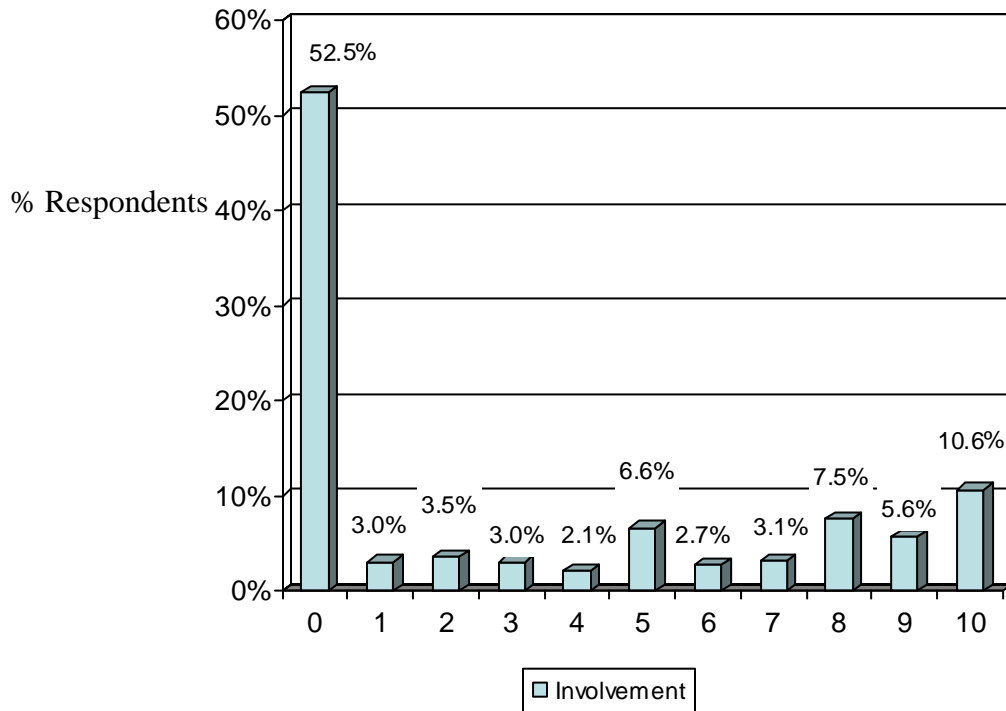
(Result significant at $p=.000$; Eta square = .03)

Involvement with the Church and Emergency Preparedness

The average mean for involvement with the Church was generally low at 3.14.

About one-quarter of the respondents (23.6%) indicated that they were highly involved (8-10) with their Church.

“On a scale from 0-10, where 10 is “highly involved” and 0 is “not involved at all”, how involved would you say you are with your Church?”



On conducting a series of multivariate analyses it was found that greater involvement with the Church and Church activities predicted greater preparedness at home, while commuting and at places of entertainment.

No significant differences were seen in the case of work. That is, with the increase in involvement with the Church, significant increase in preparedness at the work place were not seen.

The next 3 tables sum up the aforementioned significant multivariate analyses for preparedness at home, while commuting and at places of entertainment.

Level of Church involvement	Prepared for an emergency at home (Mean scores)
0-3	6.57
4-7	6.94
8-10	7.17

(Result significant at $p=.013$; Eta square = .01)

Level of Church involvement	Prepared for an emergency while commuting (Mean scores)
0-3	2.83
4-7	3.44
8-10	4.15

(Result significant at $p=.000$; Eta square = .03)

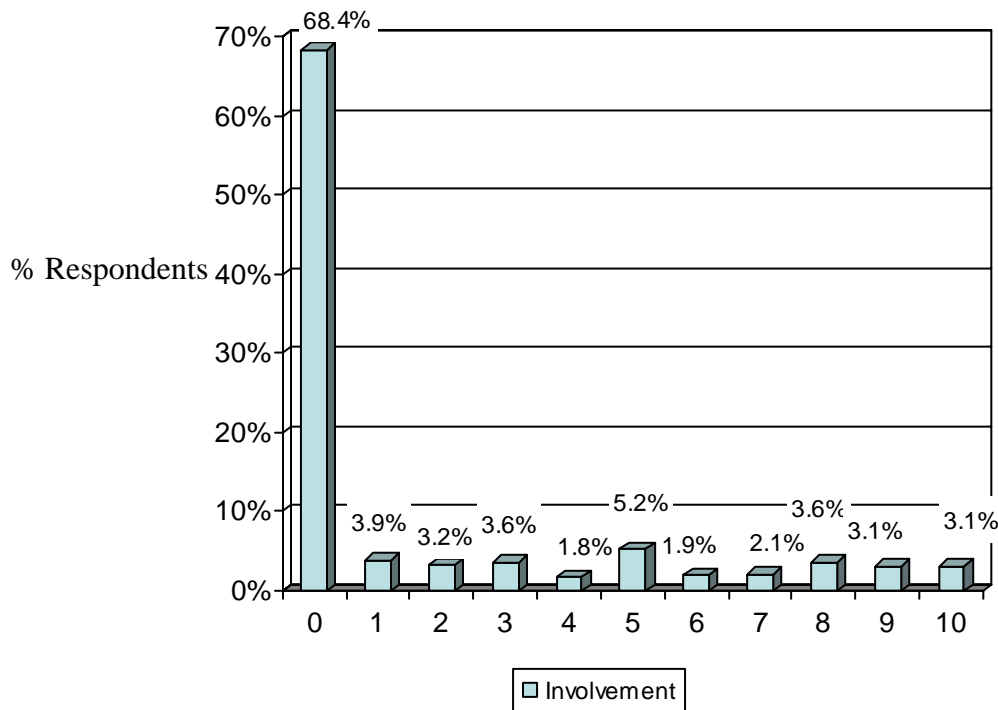
Level of Church involvement	Prepared for an emergency at place of entertainment (Mean scores)
0-3	2.22
4-7	2.9
8-10	3.05

(Result significant at $p=.002$; Eta square = .02)

Involvement with Cultural/Ethnic Group and Emergency Preparedness

The average mean for involvement with cultural/ethnic group(s) was extremely low at 1.68, with less than a tenth of the respondents (9.8%) indicating that they were highly involved (8-10) with some ethnic/cultural group(s).

“On a scale from 0-10, where 10 is “highly involved” and 0 is “not involved at all”, how involved would you say you are with any cultural/ethnic group?”



On conducting a series of multivariate analyses it was found that greater involvement with ethnic/cultural group(s) showed significant differences in preparedness only in the case of commuting and at places of entertainment.

Though the scores remained moderate to low, an increase in involvement with ethnic/cultural group(s) also saw greater emergency preparedness while commuting and at places of entertainment.

The next few tables summarize the significant multivariate analyses.

Involvement with ethnic/cultural group(s)	Prepared for an emergency while commuting (Mean scores)
0-3	3
4-7	3.93
8-10	4.54

(Result significant at $p=.000$; Eta square $=.03$)

Involvement with ethnic/cultural group(s)	Prepared for an emergency at place of entertainment (Mean scores)
0-3	2.33
4-7	2.83
8-10	3.98

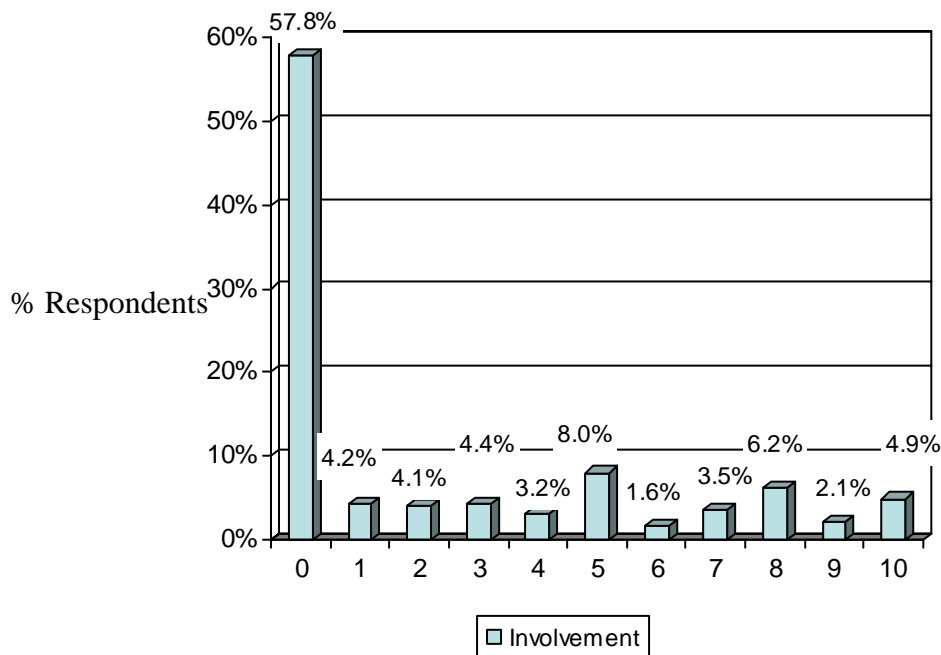
(Result significant at $p=.000$; Eta square $=.03$)

Involvement with Professional Organizations and Emergency Preparedness

The average mean for involvement with professional organizations like the rotary club, school, etc. was also extremely low at 2.3.

Only 13.2% of the respondents indicating that they were highly involved (8-10) with some professional organizations.

“On a scale from 0-10, where 10 is “highly involved” and 0 is “not involved at all”, how involved would you say you are with professional organizations like the Rotary Club, school, etc.?”



On conducting a series of multivariate analyses, significant differences were found in the case of preparedness at the workplace and while commuting. It was found that greater the involvement with professional organizations greater the preparedness while commuting.

In the case of preparedness at work, it was found that respondents who were involved with professional organizations at a medium level (4-7) were slightly more prepared for emergencies at their work place than those who were highly involved (8-10) with professional organizations.

The next 2 tables sum up the aforementioned analyses.

Level of involvement with professional organizations	Prepared for an emergency at work (Mean scores)
0-3	3.71
4-7	5.54
8-10	5.41

(Result significant at $p=.000$; Eta square = .04)

Level of involvement with professional organizations	Prepared for an emergency while commuting (Mean scores)
0-3	3.05
4-7	3.12
8-10	4.17

(Result significant at $p=.004$; Eta square = .02)

Preparedness Motivators

Respondents were asked to state how many times they think they would need to hear a message about emergency preparedness before they actually prepared for one. The mean response was 5.1. This means that in general, respondents felt that hearing a message about disaster preparedness 5 times was enough for them to actually prepare for one. The mode was 3 times. This implies that a reminder between 3-5 times would be the optimal range for respondents to actually “act”.

Given that this and the next few sections provide a detailed analysis of preparedness motivators, the aforementioned information would be helpful, as it indicates the optimal number of times a message should be repeated to drive action towards emergency preparedness.

In order to develop a comprehensive emergency preparedness index, series of questions were asked that sought to better understand what kinds of emotional motivators respondents attached to the very notion of being prepared for emergencies. That is, what emotional trigger would motivate respondents towards the “action” of preparing for emergencies/disasters?

Thus, the main purpose was to understand what kinds of underlying psychological and behavioral motivational triggers could urge respondents to pro-actively prepare for emergencies.

Respondents were asked to rate on a 0-10 scale (0 being not at all motivating and 10 being highly motivating), which of the following emotional needs and communication strategies would be most motivating for them to be prepared for a disaster:

- Fear (e.g. of loss of your life/ loss of loved one, etc.)
- The need to have peace of mind in case of a disaster
- The need for security in case of a disaster
- The need to be self sufficient/ self reliant
- The need to be in a position to help others
- Having gone through a personal experience of suffering a disaster
- Responsibility towards family and loved ones
- Prevent harm or loss of a loved one
- If you knew that something was going to happen/ per-warned about a disaster
- News about disasters (e.g. Katrina; latest collapse of a Minneapolis interstate bridge)
- Repeated advertisements/ messages about the need to be prepared
- Promotional and public events like fairs
- The availability of convenient emergency kits in the market to be better prepared
- Anniversary dates of previous disasters (e.g. inaugural day of the December 2006 windstorm; 2001 earthquake)

- Frequent and repeated reminders from government agencies
- Seasonal reminders (e.g. reminder of the windstorm in the Fall)

The aforementioned variables that were tested emerged from the series of focus groups that were conducted prior to administering the survey. While there are several ways of attempting to create the motivation to being prepared for emergencies, the goal was to explore which of the above factors would be the most optimal motivational triggers.

Results for each of the 16 motivational triggers are discussed in detail in the next few sections.

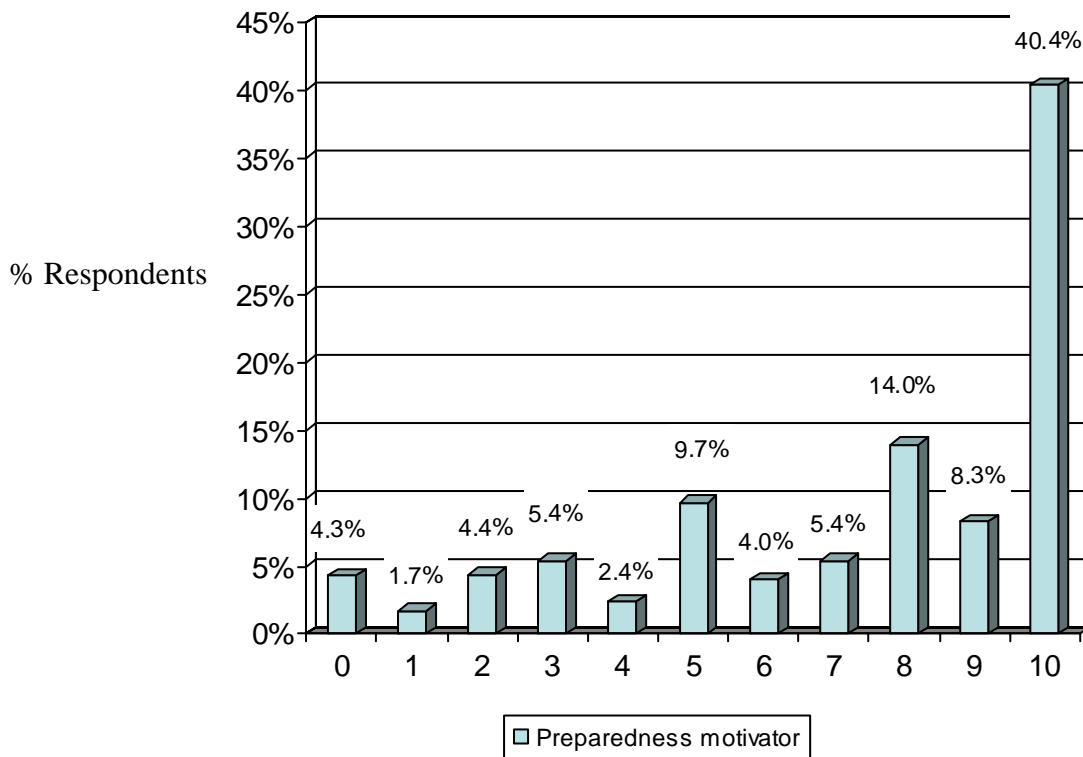
Fear

“Fear” as a motivator was operationalized as “loss of your life/loss of a loved one”. Fear as a motivation to prepare for emergencies was found to be a moderately powerful emotion.

The mean rating for using fear was moderately high at 7.37. More than half the respondents (62.7%) indicated that fear was a highly motivating (8-10) emotion that would urge them to prepare for emergencies. About half the respondents (40.4%) gave it a rating of 10.

A negative Kurtosis score of $-.242$ indicated greater variance and/or diverse views among the respondents regarding fear as a motivator.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think fear would be for you to prepare for a disaster/emergency?”



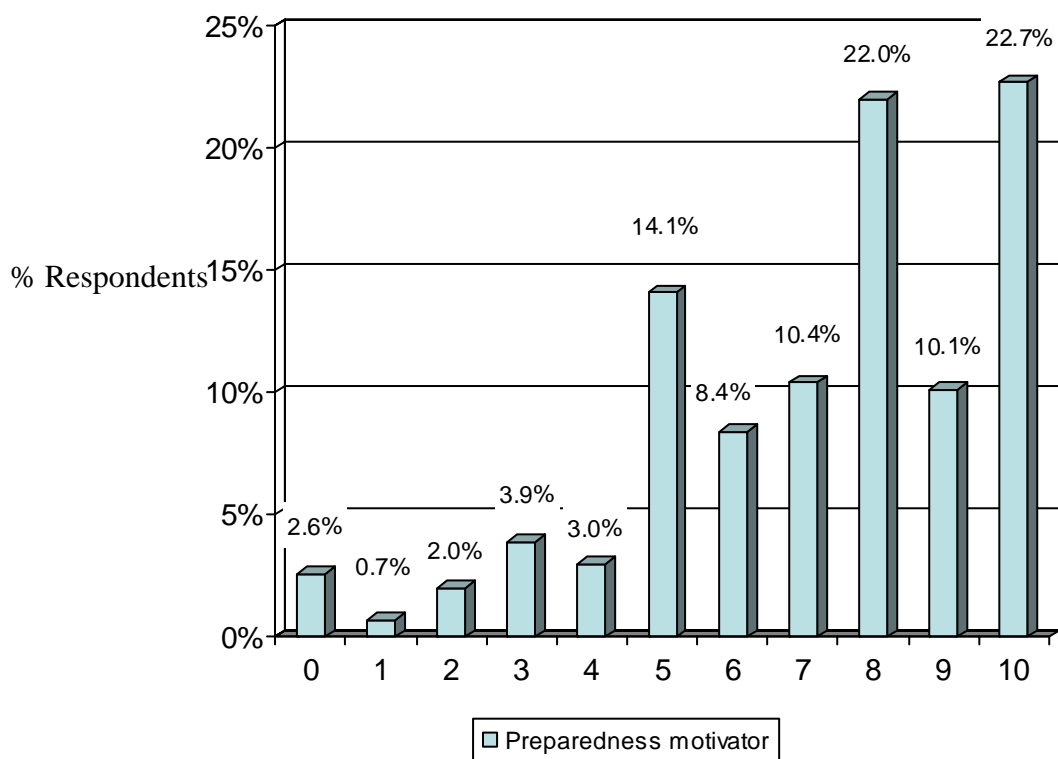
Peace of Mind

Another variable: “peace of mind in case of a disaster” was also tested as a potential motivator to prepare for emergencies. Like fear, the need to have peace of mind in case of a disaster was also a moderately powerful emotion.

The mean rating for having peace of mind during an emergency was moderately high at 7.16. More than half the respondents (54.8%) indicated that fear was a highly motivating (8-10) emotion that could urge one to prepare for emergencies. About one-quarter of the respondents (22.7%) gave it a rating of 10.

A positive Kurtosis score of .295 suggests that a high number of respondents almost homogenously reported to have found peace of mind as a motivator. As seen in the graph below, most of the respondents gave a rating between 5-10.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the need to have peace of mind in case of a disaster be for you to prepare for a disaster/emergency?”



Need for Security

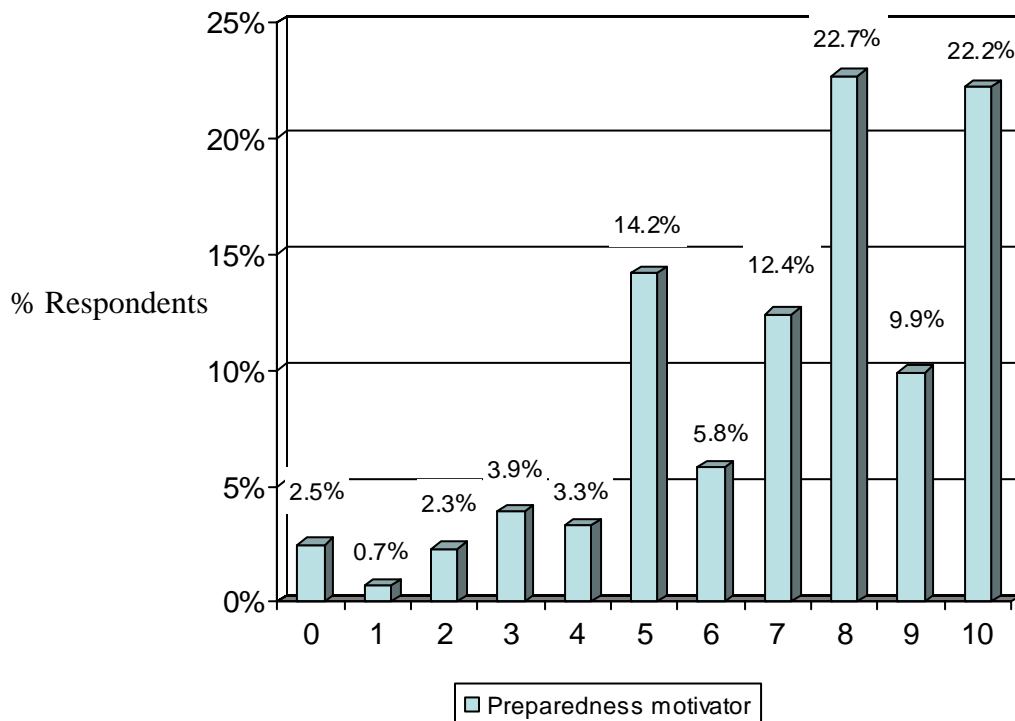
Another variable closely related to “peace of mind in case of a disaster” that was tested as a potential motivator to prepare for emergencies was “the need for security in case of a disaster”.

The mean rating for the need for security during a disaster was also 7.16. More than half the respondents (54.8%) indicated that the need for security during a disaster was a highly motivating (8-10) emotion that urges one to prepare for emergencies. About one-quarter of the respondents (22.2%) gave it a rating of 10.

Given that the ratings for both need for security and the need for peace of mind are almost at parity, implies that the 2 variables are effectively perceived as being similar motivators by the respondents.

Again, a positive Kurtosis score of .295 suggests that a high number of respondents almost homogenously reported to have found the need for security, like peace of mind as a motivator. Once again, most respondents gave a rating between 5-10.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the need for security in case of a disaster be for you to prepare for a disaster/emergency?”



Self-Dependency

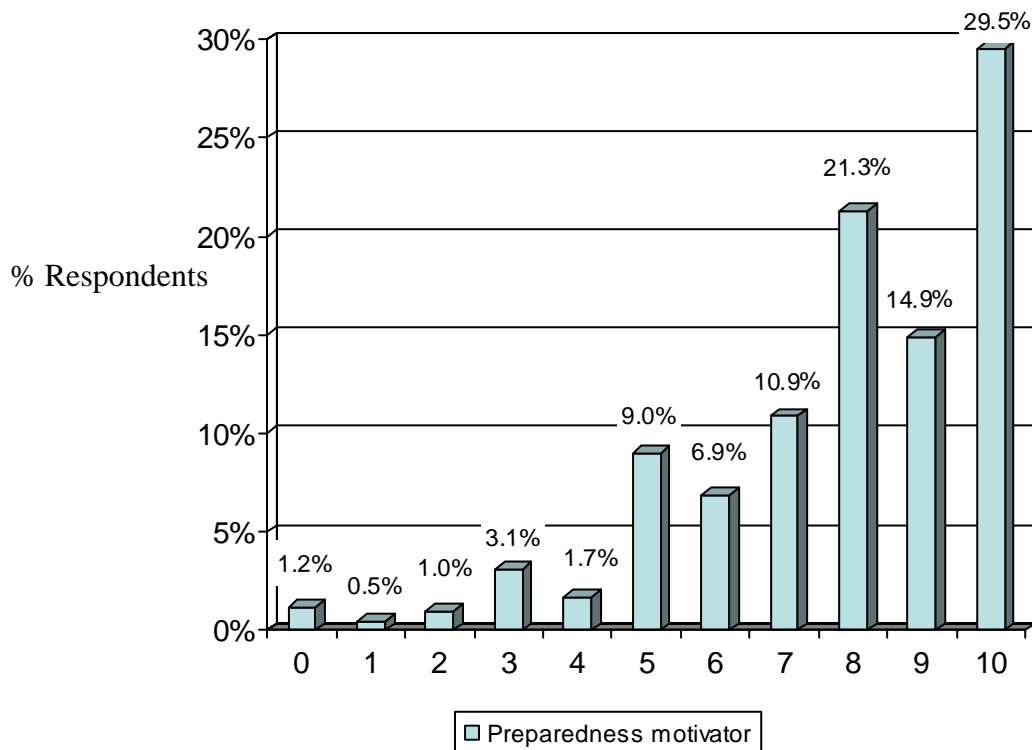
Another motivator that emerged stronger than both fear and the need for security/peace of mind was the need to be self-dependent. This variable was operationalized as “being self-sufficient/ self-reliant during an emergency”.

The mean rating for the need for being self-reliant/sufficient during a disaster was 7.81. More than half of the respondents (65.7%) indicated that the need to be self-reliant/self-sufficient during a disaster was a highly motivating (8-10) emotion that urges one to prepare for emergencies. About one-third of the respondents (29.5%) gave it a rating of 10.

A very high Kurtosis score of 1.159 suggests that there was very high consensus among the respondents regarding self-sufficiency as being a motivator for emergency preparedness.

As observed in the graph below, according to the respondents, the need to be self-sufficient/self-reliant in case of a disaster was perceived as a relatively high (7-10) motivating variable more or less uniformly across the respondents.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the need to be self-sufficient/self-reliant is for you to prepare for a disaster/emergency?”



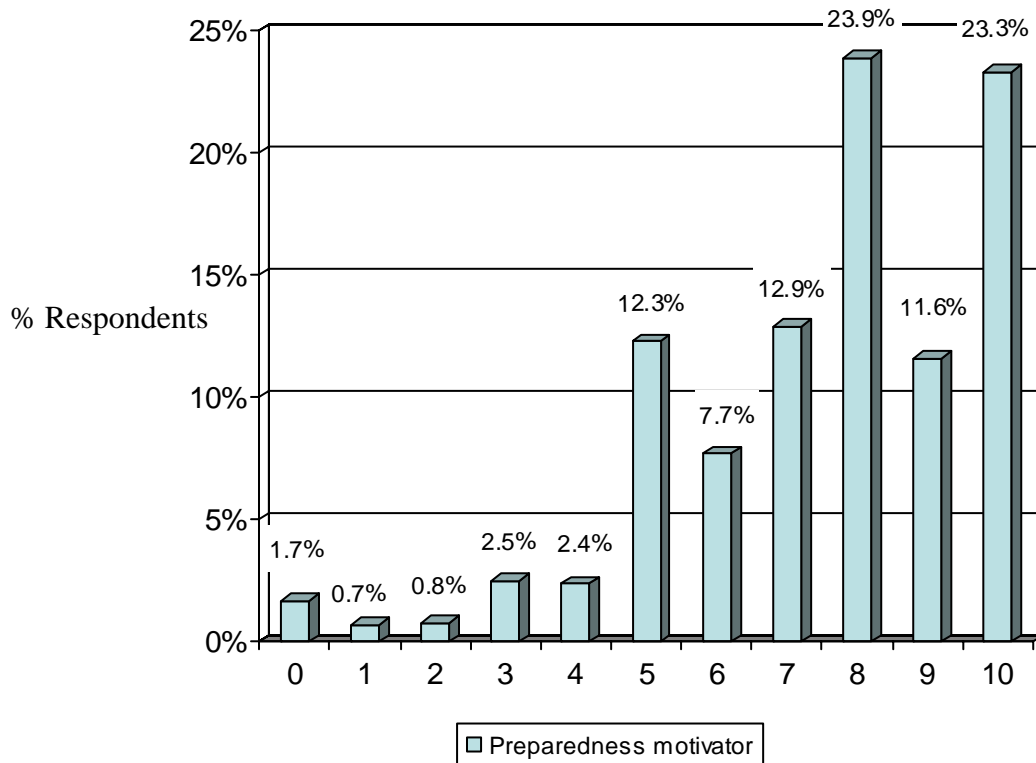
Helping Others

Another motivator closely related to the need to be self-sufficient that was tested was “the need to be in a position to help others”.

The mean rating for this variable was slightly lower than the need to be self-sufficient at 7.48. More than half the respondents (58.8%) indicated that the need to be in a position to help others during an emergency was a highly motivating (8-10) incentive to prepare for emergencies. About a quarter of the respondents (23.3%) gave it a rating of 10.

A very high Kurtosis score of .962 suggests that there was high consensus among the respondents regarding the need to be in a position to help others during an emergency.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the need to help others in case of a disaster be for you to prepare for a disaster/emergency?”



Personal Experience

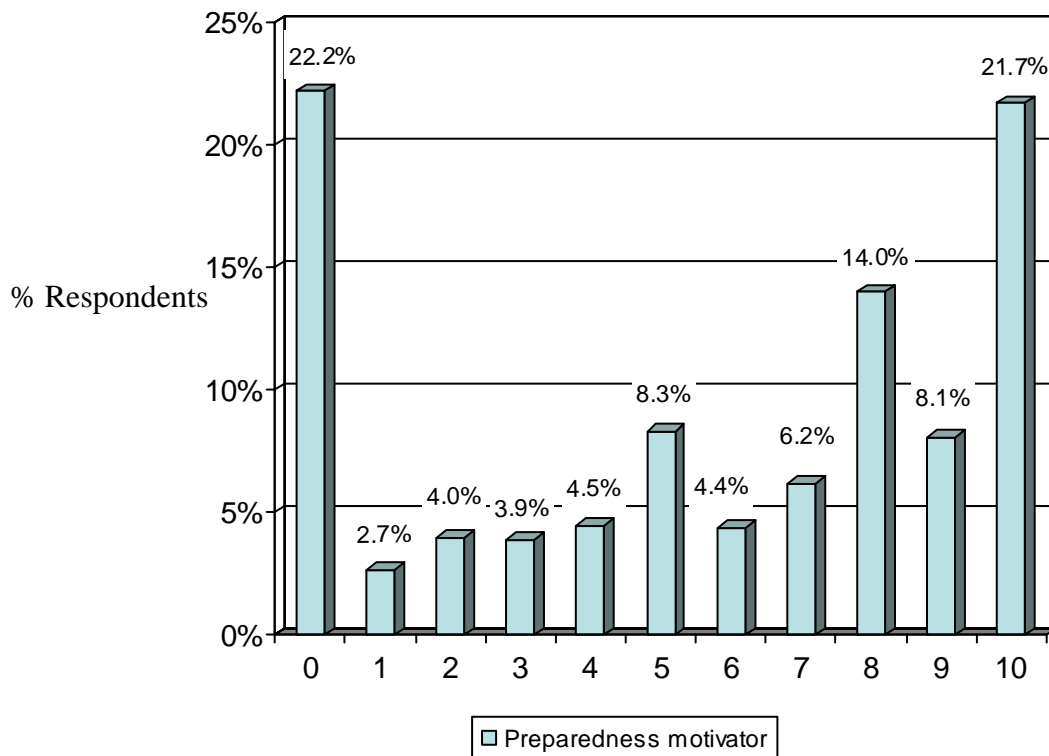
Another insight that emerged out of the focus groups was that respondents who had personally experienced a disaster would be better prepared for emergencies.

The mean rating for this variable was moderate at 5.53. The rationale for why it was perhaps not higher could be attributed to the fact that not everyone who answered the survey had personally experienced a disaster/emergency. However, the rating and the findings from the focus groups do suggest that those who had personally experienced a disaster would be better prepared for emergencies in the future.

Almost half the respondents (43.8%) gave it a high rating (8-10). It was also interesting to note that almost an equal number of respondents gave it a 0 and 10 rating.

A high negative Kurtosis score of -1.433 suggests a highly varied response rate for this variable. As observed in the graph below, almost equal extreme responses of 0 and 10 were recorded for this variable.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think having gone through a personal experience of suffering a disaster would be for you to prepare for a disaster/emergency?”



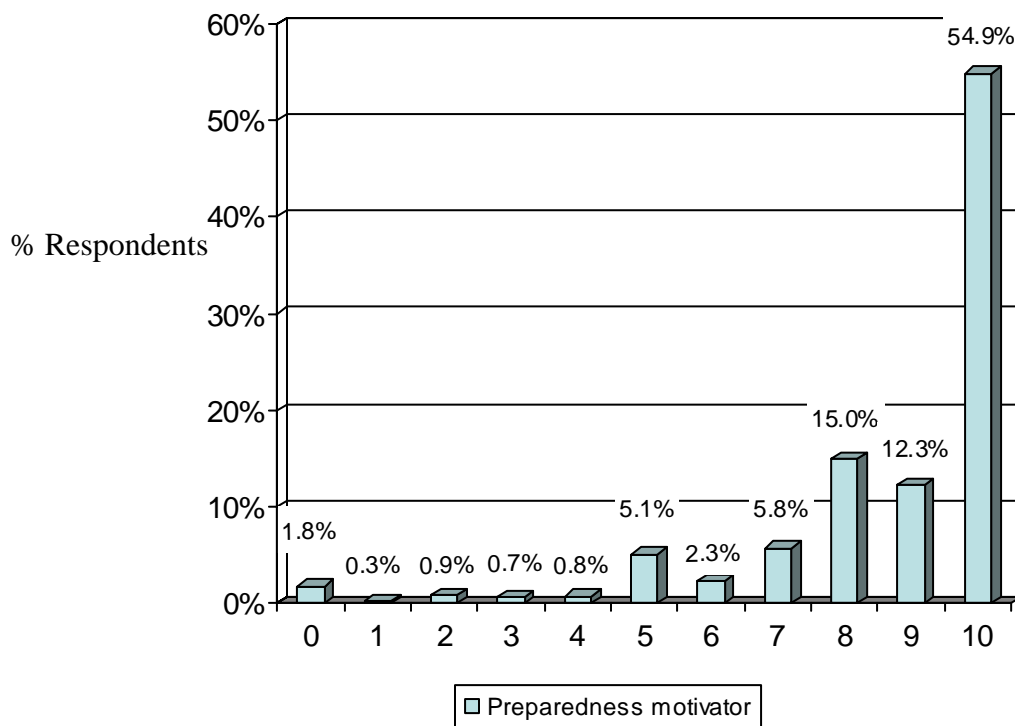
Responsibility Towards Family & Loved Ones

Of all the motivators discussed thus far, responsibility towards family and loved ones emerged as the strongest motivator. The “guilt” of not being able to provide for family members and loved ones during an emergency/disaster was a strong motivator to prepare for a disaster. This underlying mechanism was talked about by the focus group participants as well.

The average mean score for the need to be able to provide and protect family and loved ones during emergencies was high at 8.67. More than half the respondents (54.9%) gave it a rating of 10.

A high positive Kurtosis score of 4.958 suggests a uniform response of this variable as being a motivational trigger to prepare for disasters/emergencies.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the responsibility towards family and loved ones is for you to prepare for a disaster/emergency?”



Preventing Harm to Loved Ones

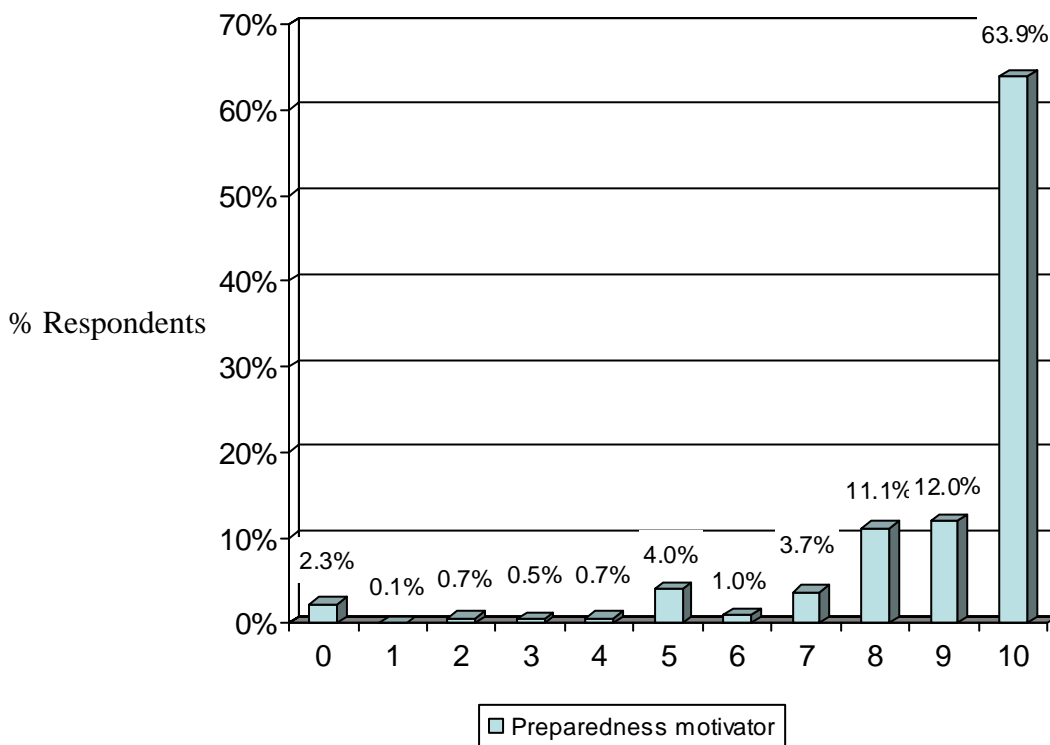
Closely related to the responsibility towards family and loved ones was the need to “prevent harm or loss of a loved one”.

This motivator emerged even stronger than responsibility towards loved ones. This could be attributed to the fact that the “guilt-factor”, as explained in the case of “responsibility towards family and loved ones” was further operationalized more directly and vividly in this variable through words like “loss” and “harm”.

The mean rating for the need to be able to provide and protect family and loved ones during emergencies was high at 8.94. More than half the respondents (63.9%) gave it a rating of 10.

An even higher positive Kurtosis score of 7.621 suggests a consensus among respondents regarding this variable. As seen in the graph below, this variable was seen as being a high motivational trigger for preparedness.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the need to prevent harm or loss of a loved one is for you to prepare for a disaster/emergency?”

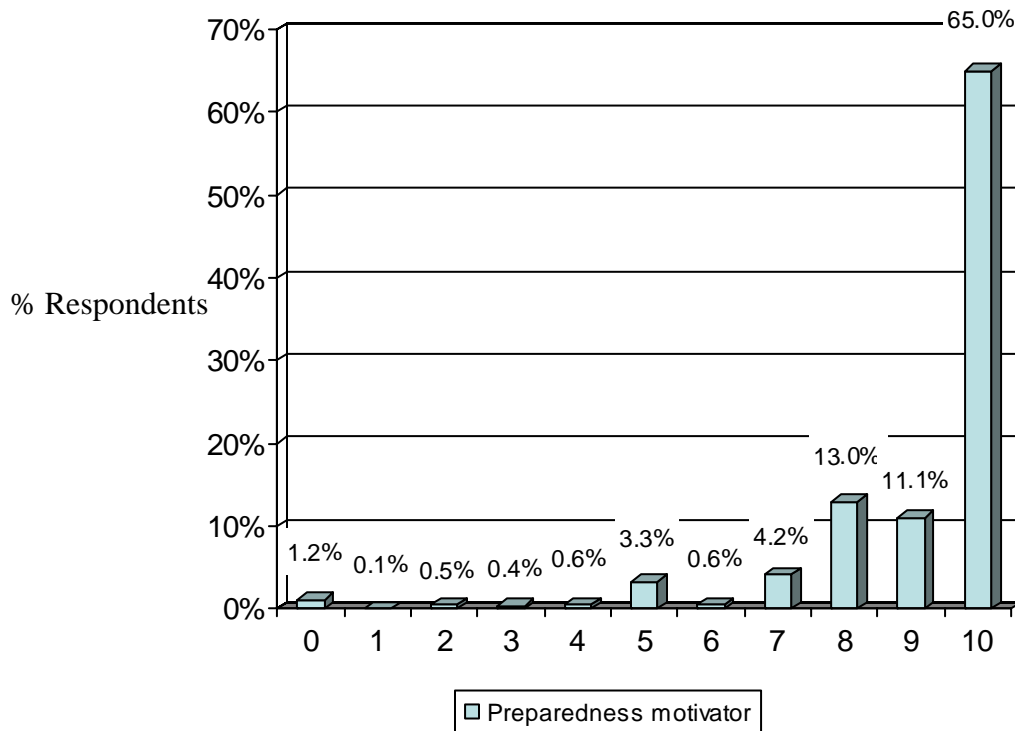


Pre-warning

Respondents were also asked to rate on a 0-10 scale if they were pre-warned about a disaster, how might that motivate them to prepare for it. Being pre-warned about a disaster/emergency emerged as the strongest motivator to be prepared for a disaster.

The mean rating for this variable was 9.08. Sixty-five percent of the respondents gave it a rating of 10. The high positive Kurtosis score (9.373) suggests that the response of all the respondents was highly homogenous, clustering as seen in the graph below, around 10.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivated do you think you would have been to be prepared for a disaster/emergency if you knew that something was going to happen/ pre-warned about a disaster?”



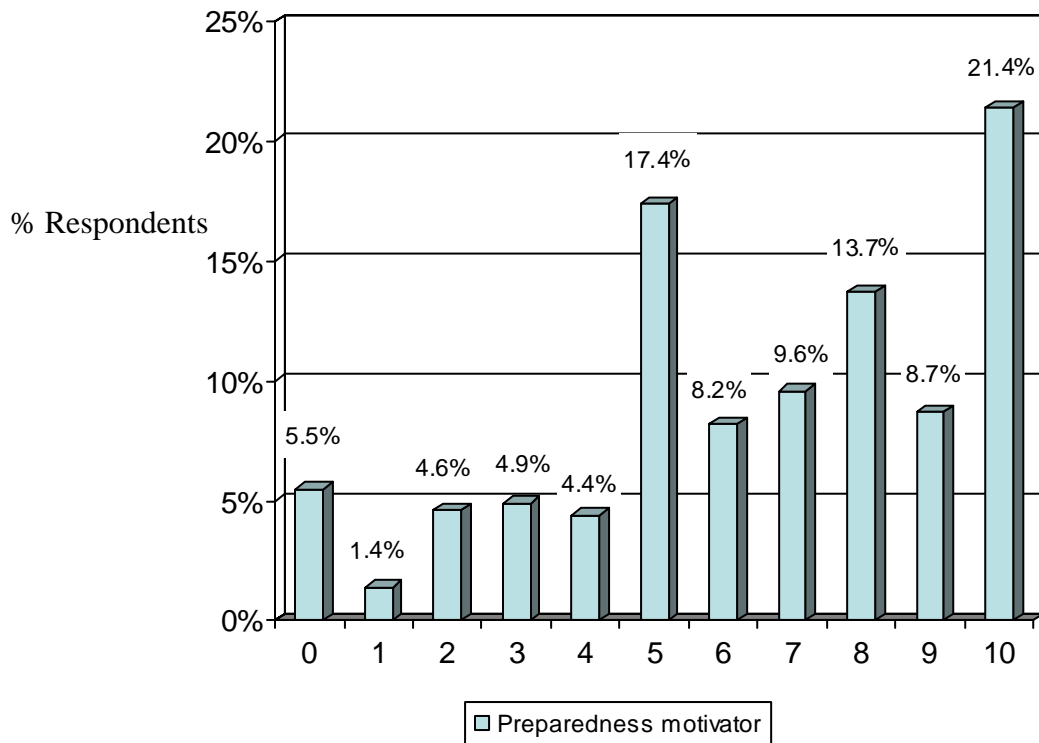
News About Disasters

Another variable that was tested was whether news about disasters such as Hurricane Katrina and more recently the collapse of a Minneapolis interstate bridge would pose as a motivator among the respondents to prepare for disasters/emergencies.

The mean score for this variable was moderately high at 6.49. About one-fifth (21.4%) of the respondents gave it a rating of 10.

A negative Kurtosis score of $-.545$ suggests that the responses for this variable as being a motivator towards emergency preparedness was varied and heterogeneous across the respondents.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think news about disasters would be for you to prepare for a disaster/emergency?”



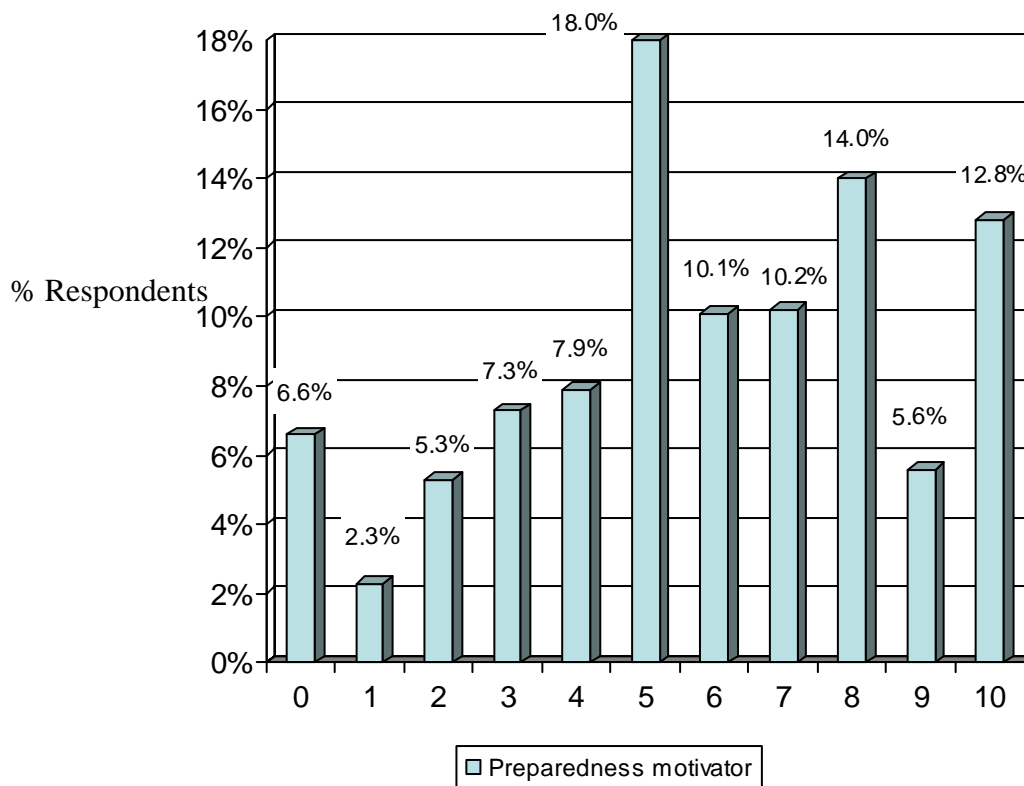
Repeated Ads/Messages

Another variable that emerged from the focus groups was the need for repeated advertising and messages about the need to be prepared for disasters as being motivators.

The mean score for this variable was moderate at 5.78. This could be attributed to the fact that too much repetition could have the opposite effect, making people complacent/ desensitized towards the issue of preparedness. However, more than one-third of the respondents (32.3%) thought it was highly motivating (8-10).

A negative Kurtosis score of $-.687$ suggests that the responses for this variable as being a motivator towards emergency preparedness was varied and heterogeneous across the respondents.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think repeated advertising and messages about the need to be prepared would be for you to prepare for a disaster/emergency?”



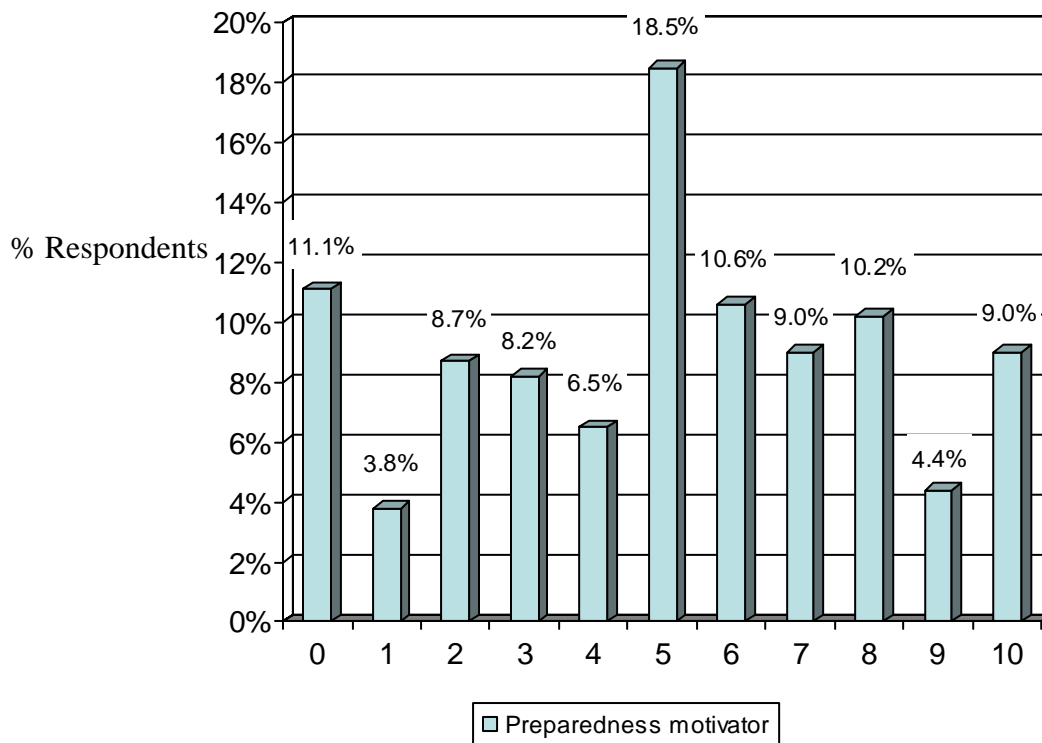
Repeated Government Reminders

Another variable closely related to repeated advertising and messages was frequent and repeated reminders from government agencies in motivating emergency preparedness.

The mean score for this variable was similarly moderate at 5.02, as seen in the case of repeated messages and advertising.

A large number of the responses for this variable fell close to the mean rating (Kurtosis score=-.932). However, a negative Kurtosis score suggests that there was large variance among the respondents regarding this variable as being a motivational trigger towards emergency preparedness.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think frequent and repeated reminders from government agencies be for you to prepare for a disaster/emergency?”



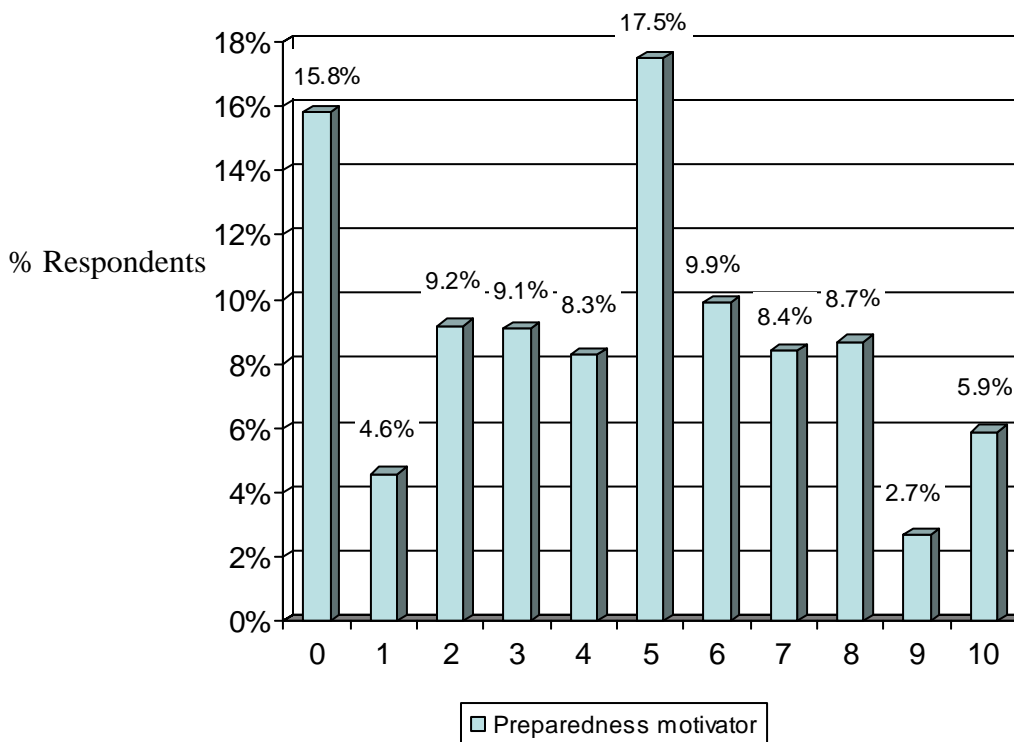
Promotional Events

In an attempt to test the effectiveness of promotional and public events like fairs as being potential motivators towards emergency preparedness, respondents were asked to rate this variable as being motivating or not.

The mean score was moderate at 4.42, suggesting that while promotional and public events like fairs spread awareness about emergency preparedness, they are relatively less effective ways of creating “action” towards actually preparing for disasters and emergencies.

The Kurtosis score was -.914, implying high variance and heterogeneity among the responses.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think promotional and public events like fairs would be for you to prepare for a disaster/emergency?”



Anniversary Dates

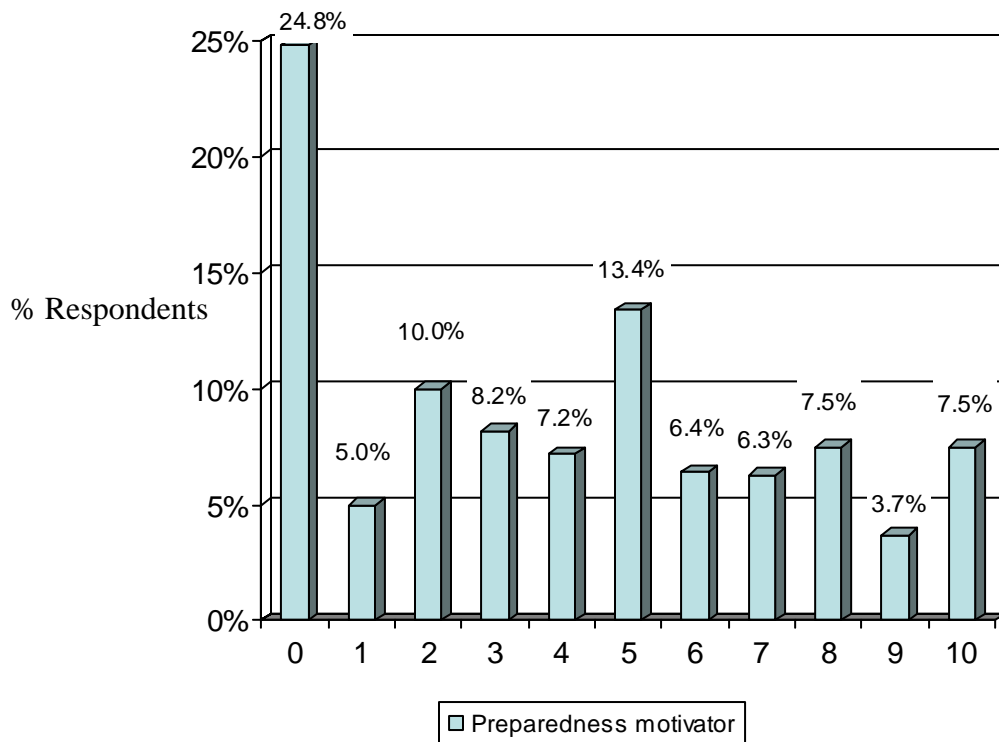
Closely related to promotional fairs and repeated advertising/messages another variable was tested, which was whether “anniversary dates of previous disasters” would be motivating for respondents to prepare for disasters.

The mean score for this variable was low at 3.96. Almost one-quarter of the respondents (24.8%) gave it a rating of 0.

Thus, the mechanism of using anniversary dates of previous disasters such as those of Hurricane Katrina did not emerge as a motivating factor towards emergency preparedness in general.

A high negative Kurtosis score of -1.099 suggests, as can be seen in the graph below that the responses in general for this variable were highly varied.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the anniversary dates of previous disasters would be for you to prepare for a disaster/emergency?”



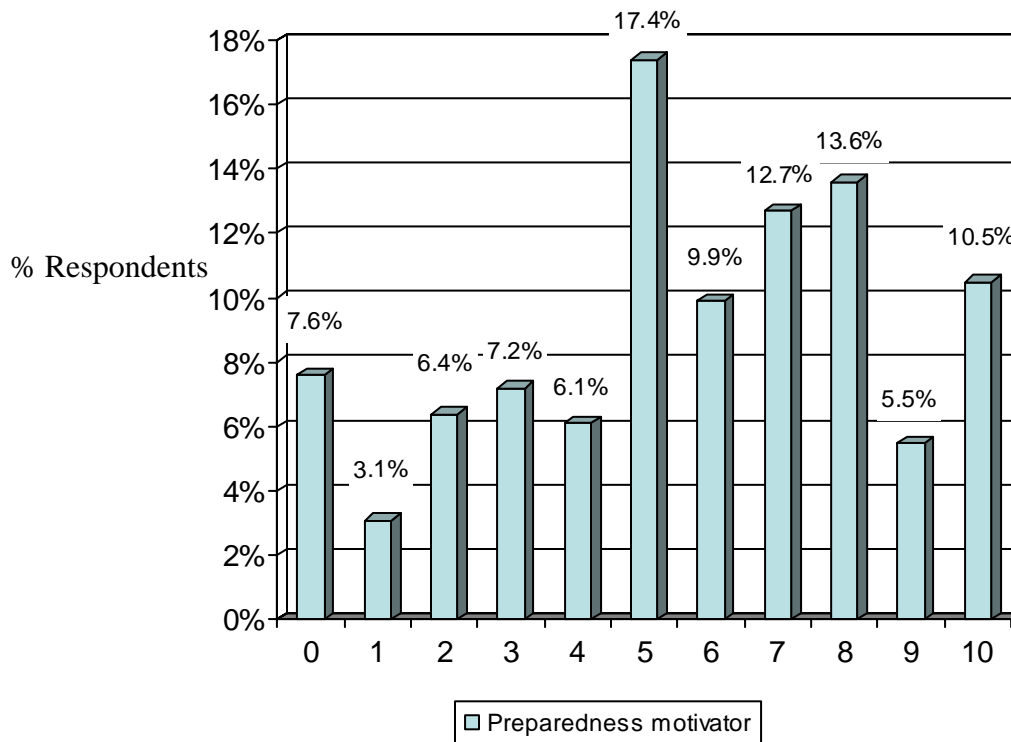
Seasonal Reminders

Closely related to anniversary dates, another variable that was tested was whether “seasonal reminders” would be motivating or not. Seasonal reminders were operationalized as reminding people about the disasters that could occur as a result of change in season. For instance, as winter approaches people can be reminded of last year’s windstorm as a motivation to prepare for it in advance?

The mean score for this variable was higher than anniversary dates. Though moderate, it was 5.61. Thus, it can be inferred that seasonal reminders are more effective as motivators towards emergency preparedness than anniversary dates. Almost one-third of the respondents (29.6%) gave it a high rating (8-10).

The Kurtosis score (-.743) suggests a high amount of variance and lack of consensus in the respondents’ responses.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think seasonal reminders would be for you to prepare for a disaster/emergency?”



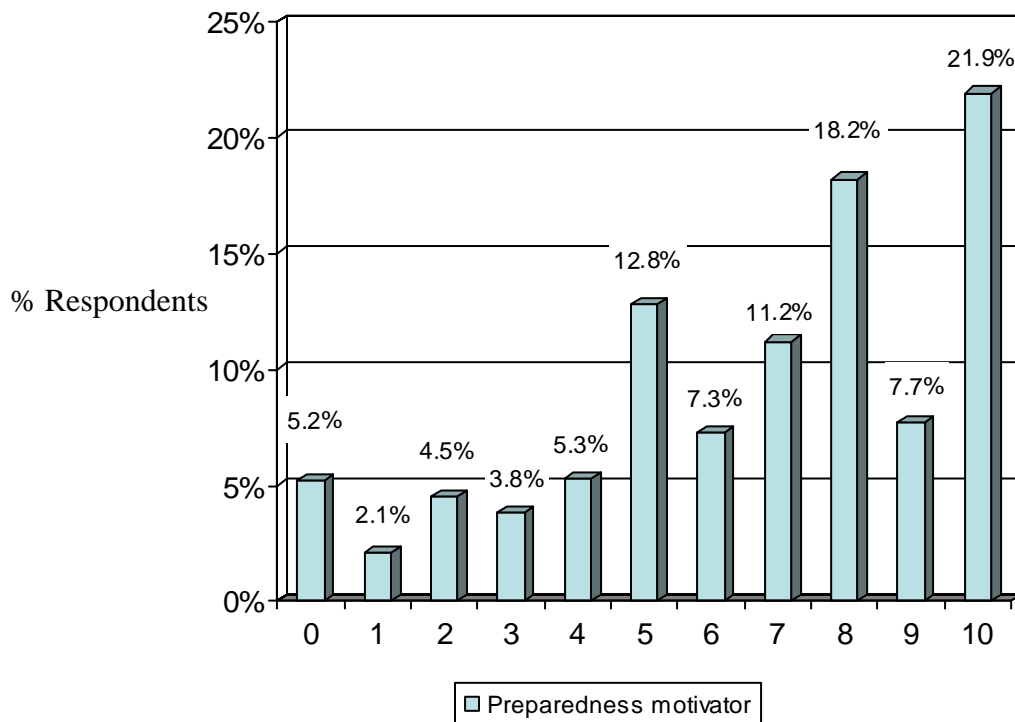
Convenient Emergency Kit Availability

Another underlying motivation of “convenience” was tested. Respondents were asked to rate whether the availability of convenient emergency kits in the market would be motivating for them to prepare for disasters.

The mean score for this variable was moderately high at 6.64. Almost half the respondents (47.8%) gave it a high rating (8-10).

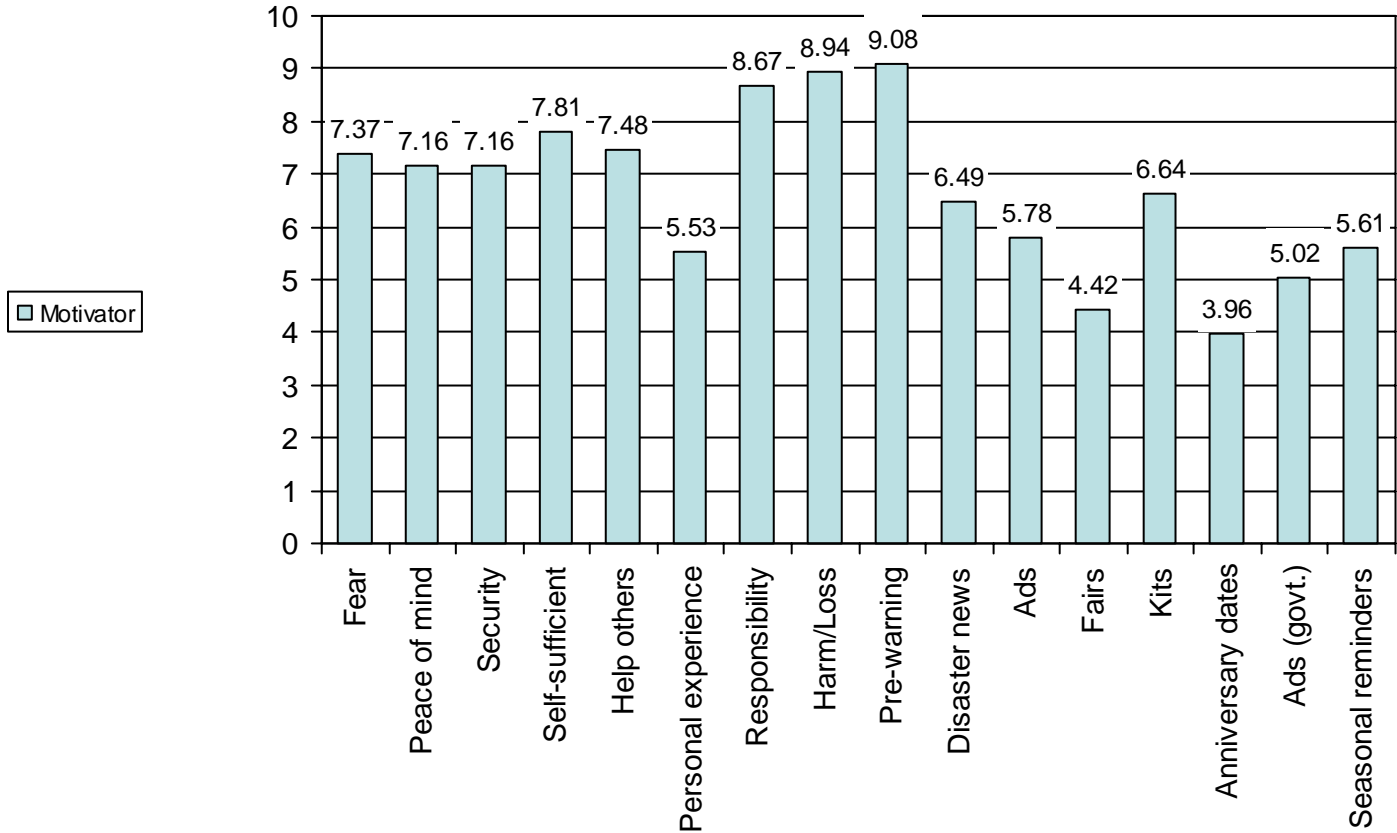
The Kurtosis score (-.401) suggests high variance in the responses. As seen in the graph below, a large number of the respondents were clustered around the tail ends (0-3 and 8-10), with a larger number skewed towards the higher end of the 0-10 scale.

“On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all”, how motivating do you think the availability of convenient emergency kits in the market would be for you to prepare for a disaster/emergency?”



To Sum Up

The graph below sums up the mean scores of the various motivators in general, as discussed in the previous sections.



Thus, the top 3 motivational triggers towards emergency preparedness that emerged are (in descending order): pre-warning about a disaster, preventing harm/loss of a loved one and responsibility towards family members and loved ones.

Ethnic Differences

In order to further index the motivational triggers, a multivariate analysis was conducted by ethnicity in order to assess which of the aforementioned motivational triggers would be significantly different by ethnicity.

The 4 ethnicities that were analyzed were:

- Caucasian
- Hispanic/Latino
- Asian
- African-American

Given that our values, behavior and what we feel affectively and emotionally are largely dependent on our cultural and ethnic background, this analysis was one way to further fine tune the preparedness index by segmenting motivators by ethnicities.

By understanding what motivates different ethnicities towards disaster preparedness, this analysis would further provide statistically generalizable differentiators of message content in creating the motivation to prepare for disasters for different ethnicities.

Significant differences were seen by ethnicity in the case of the following motivators:

- The need to have peace of mind in case of a disaster
- The need for security in case of a disaster
- The need to be in a position to help others
- Responsibility towards family and loved ones
- If you knew that something was going to happen/ per-warned about a disaster
- News about disasters (e.g. Katrina; latest collapse of a Minneapolis interstate bridge)
- Repeated advertisements/ messages about the need to be prepared
- Promotional and public events like fairs
- The availability of convenient emergency kits in the market to be better prepared
- Anniversary dates of previous disasters (e.g. inaugural day of the December 2006 windstorm; 2001 earthquake)
- Frequent and repeated reminders from government agencies
- Seasonal reminders (e.g. reminder of the windstorm in the Fall)

The results are found on the following pages:

The need to have peace of mind in case of a disaster:

Significant differences were noted among the different ethnicities and the need for peace of mind during a disaster as being a motivator towards emergency preparedness. For African-Americans this emerged as a high compelling motivator (mean=8.2).

The table below sums up the results:

Ethnicity	Peace of mind (Mean Score)
Caucasian	7.05
Hispanic/Latino	7.41
Asian	7.07
African-American	8.2

(Results were significant at $p=.023$)

The need for security in case of a disaster:

Significant differences were noted among the different ethnicities and the need for security during a disaster as being a motivator towards emergency preparedness. Again for African-Americans this emerged as a high compelling motivator (mean=7.79).

This was also more compelling than the need for peace of mind for those of Asians and Hispanic/Latino origins.

The table below sums up the results:

Ethnicity	Security (Mean Score)
Caucasian	7.00
Hispanic/Latino	7.69
Asian	7.51
African-American	7.79

(Results were significant at $p=.027$)

The need to be in a position to help others:

Significant differences were noted among the different ethnicities and the need for security during a disaster being a motivator towards emergency preparedness. Again for African-Americans this emerged as a high compelling motivator (mean=8.83).

This was also more compelling for those of Hispanic/Latino origins and Caucasians than the previous 2 variables.

The table on the next page sums up the results.

Ethnicity	Help others (Mean Score)
Caucasian	7.37
Hispanic/Latino	7.79
Asian	7.43
African-American	8.33

(Results are significant at $p=.029$)

Responsibility towards family and loved ones:

This motivator by and large emerged most compelling for respondents of all ethnicities, with African-Americans showing the highest mean rating of 9.48.

The table sums up the results:

Ethnicity	Responsibility towards family & loved ones (Mean Score)
Caucasian	8.56
Hispanic/Latino	8.84
Asian	8.82
African-American	9.48

(Results are significant at $p=.041$)

If you knew that something was going to happen/ pre-warned about a disaster:

Significant differences were noted among the different ethnicities and pre-warning as being a compelling motivator towards emergency preparedness.

Again, mean ratings for this motivator was generally high across the ethnicities, with African-Americans rated it the highest followed by Caucasians and Asians.

The table below sums up the results:

Ethnicity	Pre-warning (Mean Score)
Caucasian	9.12
Hispanic/Latino	8.56
Asian	9.10
African-American	9.53

(Results are significant at $p=.008$)

News about disasters (e.g. Katrina; latest collapse of a Minneapolis interstate bridge):

Though the scores were moderately high in general across the ethnicities, significant differences were noted among the different ethnicities.

The table below sums up the results:

Ethnicity	News about disasters (Mean Score)
Caucasian	6.26
Hispanic/Latino	6.81
Asian	7.23
African-American	7.66

(Results are significant at $p=.000$)

Repeated advertisements/ messages about the need to be prepared:

The scores ranged from moderate to moderately high across the ethnicities. Significant differences were noted among the different ethnicities.

The table below sums up the results:

Ethnicity	Repeated ads/messages (Mean Score)
Caucasian	5.54
Hispanic/Latino	6.92
Asian	6.17
African-American	7.12

(Results are significant at $p=.000$)

Promotional and public events like fairs:

The scores for this motivator were moderate in general. Significant differences were noted across the ethnicities.

The table below sums up the results:

Ethnicity	Promotional public events (Mean Score)
Caucasian	4.11
Hispanic/Latino	5.45
Asian	5.04
African-American	5.22

(Results are significant at $p=.000$)

The availability of convenient emergency kits in the market to be better prepared:

The scores for this motivator were moderately high in general across the ethnicities, significant differences were noted among the different ethnicities.

The table on the next page sums up the results.

Ethnicity	Availability of convenient kits (mean Score)
Caucasian	6.49
Hispanic/Latino	6.91
Asian	6.87
African-American	7.90

(Results are significant at $p=.015$)

Anniversary dates of previous disasters (e.g. inaugural day of the December 2006 windstorm; 2001 earthquake):

The mean scores for this motivator varied across the ethnicities. As a motivator, communication of anniversary dates of previous disasters ranked highest at 6.23 for those of Hispanic/Latino origins.

The table below sums up the results:

Ethnicity	Anniversary dates (Mean Score)
Caucasian	3.46
Hispanic/Latino	6.23
Asian	4.86
African-American	5.62

(Results are significant at $p=.000$)

Frequent and repeated reminders from government agencies:

With regard to frequent and repeated reminders from government agencies as being motivational triggers towards emergency preparedness, the mean scores ranged from low to moderately high.

Thus, significant differences were noted by ethnicities.

The table below sums up the results:

Ethnicity	Frequent reminders from govt. agencies (Mean Scores)
Caucasian	4.76
Hispanic/Latino	6.10
Asian	5.34
African-American	6.53

(Results are significant at $p=.000$)

Seasonal reminders (e.g. reminder of the windstorm):

Across the ethnicities, seasonal reminders proved to be better motivators than frequent and repeated reminders from government agencies.

The table below sums up the results:

Ethnicity	Seasonal reminders (Mean Scores)
Caucasian	5.25
Hispanic/Latino	7.10
Asian	6.17
African-American	7.20

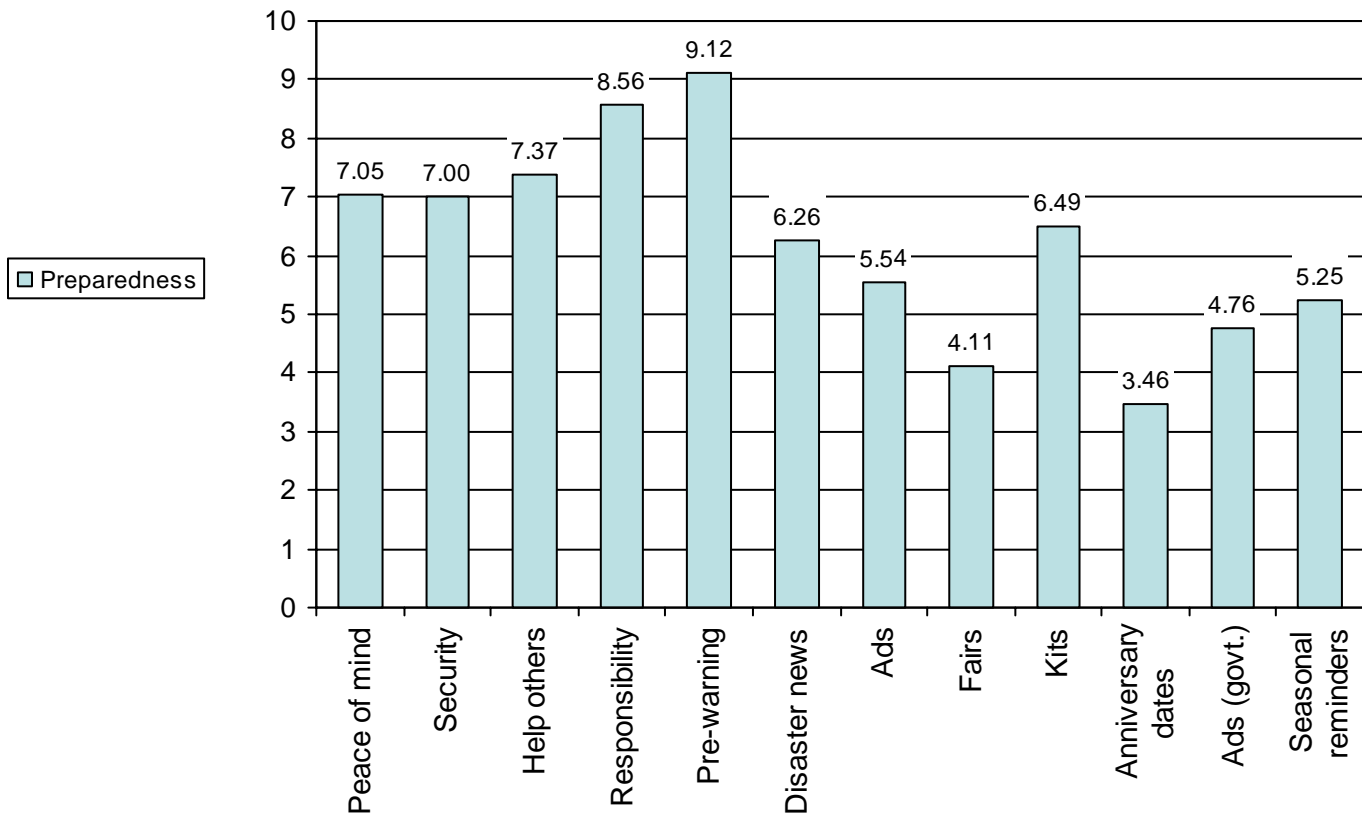
(Results are significant at $p=.000$)

To sum up, it was found that being pre-warned about a disaster and responsibility towards family and loved ones were largely the top 2 motivators across in general. The third motivator varied by ethnicity. The following sections discuss the results in detail.

Motivational Triggers by Ethnic Origins: For Those of Caucasian Origins

The top 3 motivational triggers for Caucasians that emerged are (descending order): pre-warning about a disaster (mean=9.12), responsibility towards family and loved ones (mean=8.56) and being in a position to help others (mean=7.37).

The graph below sums up the results:



A correlation analysis was also conducted of the 16 motivational triggers for Caucasians in order to determine which of the motivational triggers are correlated with one another.

This would further provide a better understanding from a social marketing perspective, which of the triggers could be used in conjunction in order to produce optimal motivational triggers.

The table on the following page sums up the correlation scores.

Motivational Triggers for Caucasians –Correlation Scores

Motivator	Fear	Peace of mind	Security	Self-reliance	Help others	Personal experience	Responsibility	Harm/Loss
Fear	1	.389(**)	.397(**)	.280(**)	.252(**)	.188(**)	.314(**)	.363(**)
Peace of mind	.389(**)	1	.665(**)	.484(**)	.395(**)	.214(**)	.367(**)	.347(**)
Security	.397(**)	.665(**)	1	.538(**)	.376(**)	.218(**)	.379(**)	.375(**)
Self-reliance	.280(**)	.484(**)	.538(**)	1	.517(**)	.248(**)	.381(**)	.348(**)
Help others	.252(**)	.395(**)	.376(**)	.517(**)	1	.178(**)	.389(**)	.358(**)
Personal experience	.188(**)	.214(**)	.218(**)	.248(**)	.178(**)	1	.289(**)	.259(**)
Responsibility	.314(**)	.367(**)	.379(**)	.381(**)	.389(**)	.289(**)	1	.750(**)
Harm/Loss	.363(**)	.347(**)	.375(**)	.348(**)	.358(**)	.259(**)	.750(**)	1
Pre-warned	.287(**)	.241(**)	.247(**)	.243(**)	.188(**)	.096(*)	.341(**)	.375(**)
Disaster news	.347(**)	.362(**)	.435(**)	.339(**)	.297(**)	.208(**)	.243(**)	.193(**)
Repeated ads	.358(**)	.410(**)	.438(**)	.287(**)	.245(**)	.171(**)	.266(**)	.237(**)
Fairs	.270(**)	.340(**)	.363(**)	.279(**)	.330(**)	.168(**)	.176(**)	.182(**)
Kit availability	.293(**)	.314(**)	.308(**)	.221(**)	.246(**)		.258(**)	.251(**)
Anniversaries	.244(**)	.267(**)	.335(**)	.182(**)	.215(**)	.228(**)	.197(**)	.193(**)
Frequent govt. reminders	.305(**)	.372(**)	.359(**)	.263(**)	.218(**)	.184(**)	.244(**)	.238(**)
Seasonal reminders	.249(**)	.362(**)	.362(**)	.259(**)	.253(**)	.256(**)	.270(**)	.255(**)

Motivator	Pre-warned	Disaster news	Repeated ads	Fairs	Kit availability	Anniversaries	Frequent govt. reminders	Seasonal reminders
Fear	.287(**)	.347(**)	.358(**)	.270(**)	.293(**)	.244(**)	.305(**)	.249(**)
Peace of mind	.241(**)	.362(**)	.410(**)	.340(**)	.314(**)	.267(**)	.372(**)	.362(**)
Security	.247(**)	.435(**)	.438(**)	.363(**)	.308(**)	.335(**)	.359(**)	.362(**)
Self-reliance	.243(**)	.339(**)	.287(**)	.279(**)	.221(**)	.182(**)	.263(**)	.259(**)
Help others	.188(**)	.297(**)	.245(**)	.330(**)	.246(**)	.215(**)	.218(**)	.253(**)
Personal experience	.096(*)	.208(**)	.171(**)	.168(**)		.228(**)	.184(**)	.256(**)
Responsibility	.341(**)	.243(**)	.266(**)	.176(**)	.258(**)	.197(**)	.244(**)	.270(**)
Harm/Loss	.375(**)	.193(**)	.237(**)	.182(**)	.251(**)	.193(**)	.238(**)	.255(**)
Pre-warned	1	.190(**)	.278(**)	.164(**)	.276(**)	.169(**)	.182(**)	.209(**)
Disaster news	.190(**)	1	.580(**)	.464(**)	.356(**)	.420(**)	.427(**)	.385(**)
Repeated ads	.278(**)	.580(**)	1	.498(**)	.429(**)	.473(**)	.662(**)	.519(**)
Fairs	.164(**)	.464(**)	.498(**)	1	.399(**)	.496(**)	.478(**)	.457(**)
Kit availability	.276(**)	.356(**)	.429(**)	.399(**)	1	.325(**)	.465(**)	.448(**)
Anniversaries	.169(**)	.420(**)	.473(**)	.496(**)	.325(**)	1	.531(**)	.532(**)
Frequent govt. reminders	.182(**)	.427(**)	.662(**)	.478(**)	.465(**)	.531(**)	1	.663(**)
Seasonal reminders	.209(**)	.385(**)	.519(**)	.457(**)	.448(**)	.532(**)	.663(**)	1

*Results significant at $p=.05$

**Results significant at $p=.01$

Correlation analysis measures the strength of association between two variables. It also examines the predictability of one variable upon another. Correlations are stochastic, that is, they occur at one point in time, and they involve determining linear dependence.

For instance, a strong positive correlation between the need for security and peace of mind means that if the need for security is emphasized in a communication, it would also create a sense of peace of mind and vice-a-versa. Also, greater the need for security,

greater the peace of mind. Thus, those who feel that a sense of security is important to them during an emergency, would also feel that peace of mind is equally important.

Correlations are generally interpreted in three segments (low, medium and large) based on the score. In these tables scores of at least 0.50 were highlighted.

Interpretation of Correlations

0.10 – 0.29 = small correlation

0.30 – 0.49 = medium correlation

0.50 – 1.00 = large correlation

High positive correlations were noted between:

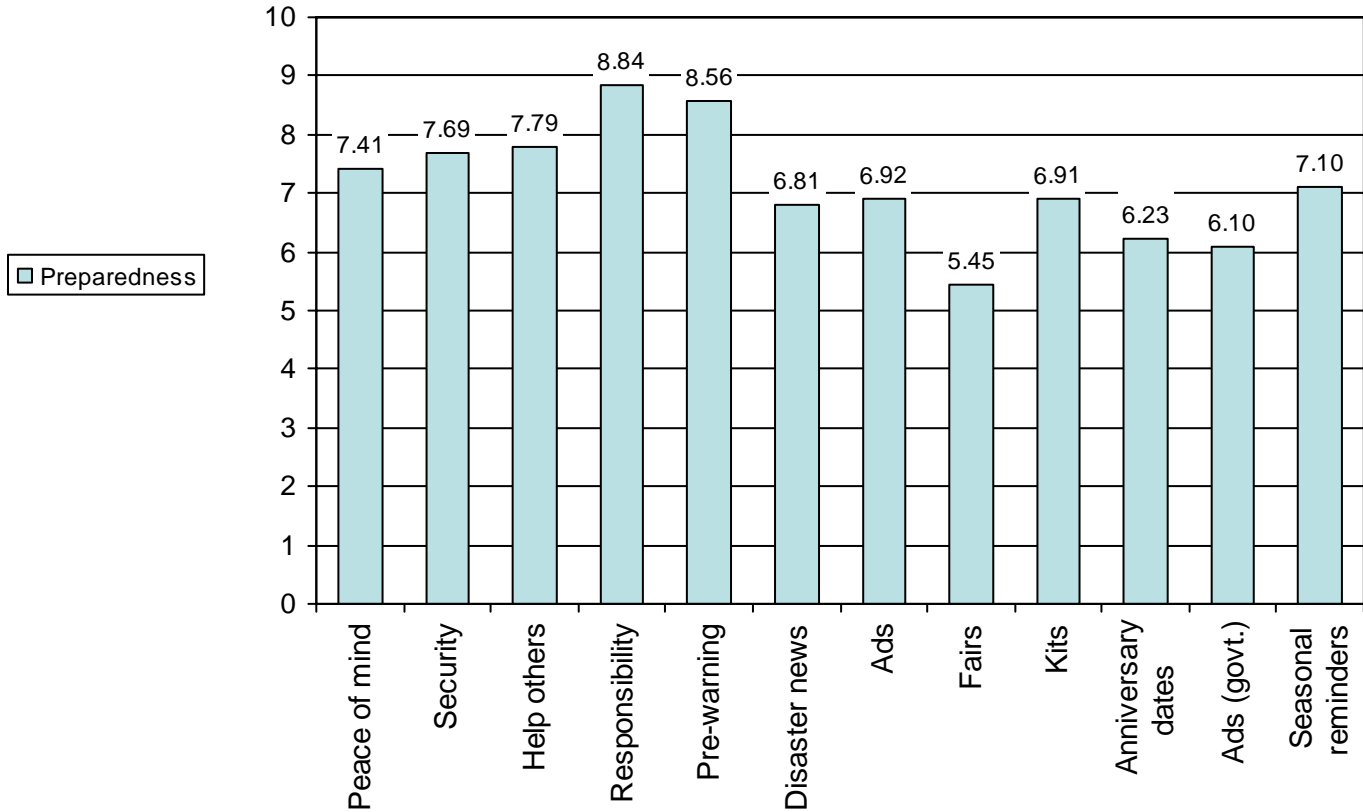
- The need for security is highly correlated with peace of mind ($r=.665$) and self-reliance ($r=.538$)
- The need to be self-reliant is highly correlated with being in a position to help others ($r=.517$)
- A very high correlation was noted between responsibility towards family and loved ones and preventing harm/loss to loved ones ($r=.750$)
- News about disasters (Hurricane Katrina, etc.) is highly correlated with repeated ads and reminders ($r=.580$)
- Frequent government reminders is highly correlated with repeated ads ($r=.662$)
- Repeated seasonal reminders is highly correlated with repeated ads ($r=.519$)
- Frequent government reminders is highly correlated with anniversaries of disasters ($r=.531$)
- Seasonal reminders is highly correlated with anniversaries of disasters ($r=.532$)
- Frequent government reminders is highly correlated with seasonal reminders ($r=.663$). Thus, those who value frequent government reminders would also value seasonal reminders

Thus, emphasizing through frequent government seasonal reminders that preparing for emergencies/disasters means that family and loved ones are protected would be a potentially optimal strategy to motivate those of Caucasian origins to prepare for future emergencies and disasters.

Motivational Triggers by Ethnic Origins: For Those of Hispanic/Latino Origins

The top 3 motivational triggers for those of Hispanic/Latino origins that emerged are (descending order): responsibility towards family and loved ones (mean=8.84), being pre-warned about a disaster (mean=8.56) and being in a position to help others (mean=7.79).

The graph below sums up the results:



A correlation analysis was also conducted of the 16 motivational triggers for those of Hispanic/Latino origins in order to determine which of the triggers are correlated with one another.

This would further provide a better understanding from a social marketing perspective, which of the triggers could be used in conjunction in order to produce optimal motivational triggers.

The table on the next page sums up the correlation scores.

Motivational Triggers for Hispanics/Latinos –Correlation Scores

Motivator	Fear	Peace of mind	Security	Self-reliance	Help others	Personal experience	Responsibility	Harm/Loss
Fear	1	.329(**)	.316(*)					
Peace of mind	.329(**)	1	.729(**)	.540(**)	.561(**)	.355(**)	.369(**)	.251(*)
Security	.316(*)	.729(**)	1	.676(**)	.610(**)	.350(**)	.585(**)	.434(**)
Self-reliance		.540(**)	.676(**)	1	.498(**)	.464(**)	.568(**)	
Help others		.561(**)	.610(**)	.498(**)	1		.469(**)	.268(*)
Personal experience		.355(**)	.350(**)	.464(**)		1	.276(*)	.350(**)
Responsibility		.369(**)	.585(**)	.568(**)	.469(**)	.276(*)	1	.541(**)
Harm/Loss		.251(*)	.434(**)		.268(*)	.350(**)	.541(**)	1
Pre-warned			.390(**)	.329(**)	.283(*)		.581(**)	.415(**)
Disaster news		.292(*)	.353(**)	.323(**)	.335(**)			
Repeated ads		.392(**)	.555(**)	.389(**)	.432(**)		.433(**)	.295(*)
Fairs		.341(**)	.356(**)	.477(**)	.301(*)			
Kit availability		.563(**)	.676(**)	.493(**)	.526(**)		.370(**)	.280(*)
Anniversaries		.380(**)	.461(**)	.410(**)	.307(*)		.309(*)	
Frequent govt. reminders		.384(**)	.477(**)	.371(**)	.441(**)			
Seasonal reminders		.372(**)	.478(**)	.495(**)	.552(**)		.381(**)	

Motivator	Pre-warned	Disaster news	Repeated ads	Fairs	Kit availability	Anniversaries	Frequent govt. reminders	Seasonal reminders
Fear								
Peace of mind		.292(*)	.392(**)	.341(**)	.563(**)	.380(**)	.384(**)	.372(**)
Security	.390(**)	.353(**)	.555(**)	.356(**)	.676(**)	.461(**)	.477(**)	.478(**)
Self-reliance	.329(**)	.323(**)	.389(**)	.477(**)	.493(**)	.410(**)	.371(**)	.495(**)
Help others	.283(*)	.335(**)	.432(**)	.301(*)	.526(**)	.307(*)	.441(**)	.552(**)
Personal experience								
Responsibility	.581(**)		.433(**)		.370(**)	.309(*)		.381(**)
Harm/Loss	.415(**)		.295(*)		.280(*)			
Pre-warned	1	.497(**)	.558(**)		.341(**)			.355(**)
Disaster news	.497(**)	1	.690(**)	.533(**)	.466(**)	.339(**)	.462(**)	.348(**)
Repeated ads	.558(**)	.690(**)	1	.576(**)	.573(**)	.472(**)	.554(**)	.451(**)
Fairs		.533(**)	.576(**)	1	.477(**)	.644(**)	.524(**)	.369(**)
Kit availability	.341(**)	.466(**)	.573(**)	.477(**)	1	.527(**)	.633(**)	.551(**)
Anniversaries		.339(**)	.472(**)	.644(**)	.527(**)	1	.620(**)	.522(**)
Frequent govt. reminders		.462(**)	.554(**)	.524(**)	.633(**)	.620(**)	1	.717(**)
Seasonal reminders	.355(**)	.348(**)	.451(**)	.369(**)	.551(**)	.522(**)	.717(**)	1

*Results significant at $p=.05$

**Results significant at $p=.01$

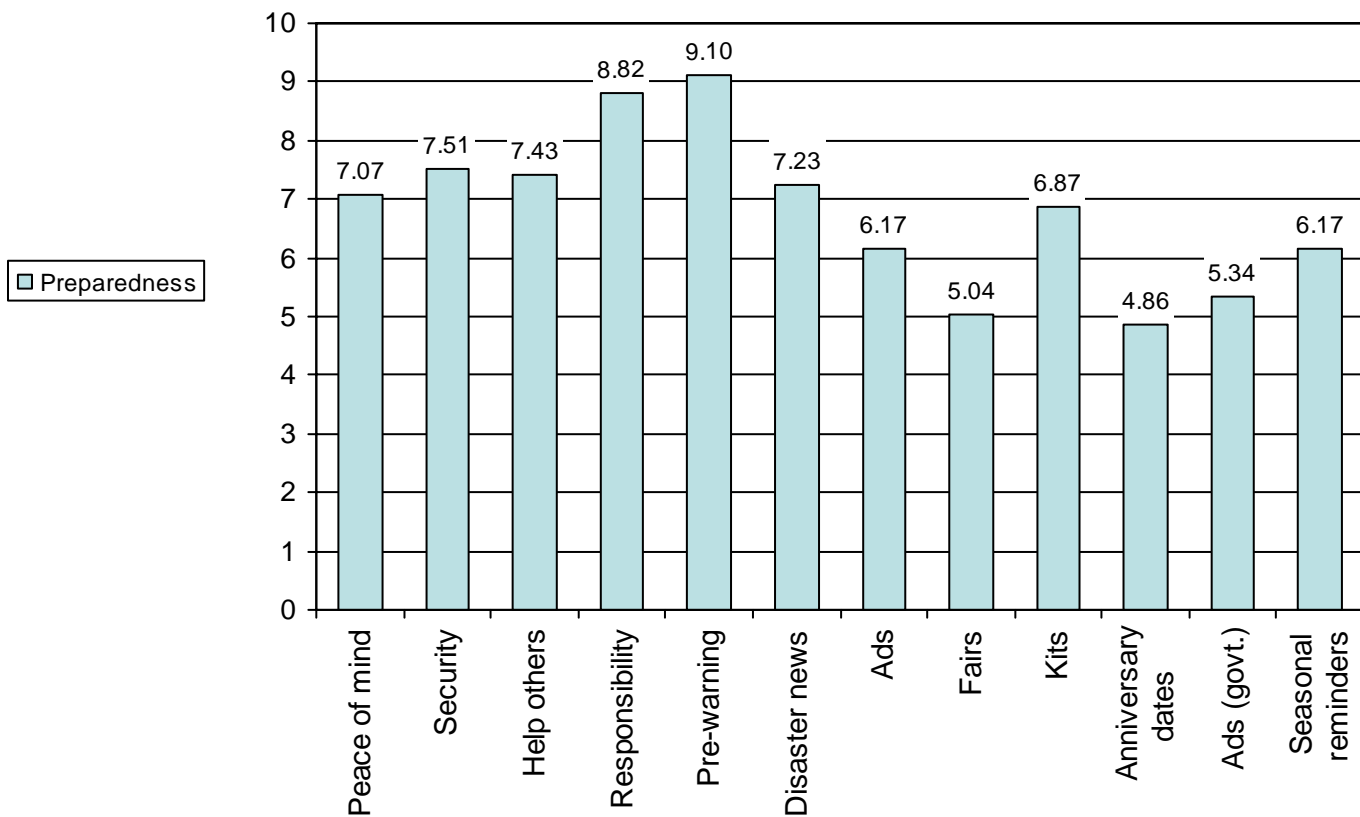
Several high positive correlations were noted between:

- The need for security is highly correlated with peace of mind ($r=.729$) and the need for security and self-reliance ($r=.676$)
- The need to be self-reliant is highly correlated with peace of mind ($r=.540$)
- Being in a position to help others is highly correlated with peace of mind ($r=.561$)
- The convenient availability of an emergency kit is highly correlated with peace of mind ($r=.563$)
- The need to be self-reliant is highly correlated with being in a position to help others ($r=.610$)
- The need for security is highly correlated with the need to be self-reliant ($r=.676$)
- The need for security is highly correlated with responsibility towards family and loved ones ($r=.585$), repeated ads ($r=.555$) and the convenient availability of emergency kits ($r=.676$)
- Responsibility towards family and loved ones is highly correlated with the need to be self-reliant ($r=.568$)
- Convenient availability of emergency kits is highly correlated with being in a position to help others ($r=.526$)
- Being in a position to help others is highly correlated with seasonal reminders ($r=.552$)
- Responsibility towards family and loved ones is highly correlated with preventing harm/loss of loved ones ($r=.541$)
- Being pre-warned about a disaster is highly correlated with responsibility towards family and loved ones ($r=.581$) and repeated advertisements ($r=.558$)
- News about disasters is highly correlated with repeated advertisements ($r=.690$) and fairs and other promotional events ($r=.533$)
- Repeated ads is highly correlated with promotional events like fairs ($r=.576$), convenient availability of emergency kits ($r=.573$) and frequent government reminders ($r=.554$)
- Fairs is highly correlated with anniversaries ($r=.644$) and frequent government reminders ($r=.524$)
- Availability of convenient emergency kits is highly correlated with anniversaries of disasters ($r=.527$), frequent government reminders ($r=.633$) and seasonal reminders ($r=.551$)
- Anniversaries is highly correlated with frequent government reminders ($r=.620$) and seasonal reminders ($r=.522$)
- Frequent government reminders and seasonal reminders ($r=.717$)

Motivational Triggers by Ethnic Origins: For Those of Asian Origins

The top 3 motivational triggers for Asians that emerged are (descending order): pre-warning (mean=9.10), responsibility towards family and loved ones (mean=8.82) and having a sense of security in case of a disaster (mean=7.51).

The graph below sums up the results:



A correlation analysis was also conducted of the 16 motivational triggers for Asians in order to determine which of the triggers are correlated with one another.

This would further provide a better understanding from a social marketing perspective, which of the triggers could be used in conjunction in order to produce optimal motivational triggers.

The table on the following page sums up the correlation scores.

Motivational Triggers for Asians –Correlation Scores

Motivator	Fear	Peace of mind	Security	Self-reliance	Help others	Personal experience	Responsibility	Harm/Loss
Fear	1	.405(**)	.362(**)	.284(**)	.348(**)	.240(*)	.296(**)	.342(**)
Peace of mind	.405(**)	1	.684(**)	.473(**)	.400(**)	.282(**)	.206(*)	.254(**)
Security	.362(**)	.684(**)	1	.348(**)	.256(**)	.240(*)		
Self-reliance	.284(**)	.473(**)	.348(**)	1	.482(**)	.265(**)		
Help others	.348(**)	.400(**)	.256(**)	.482(**)	1	.313(**)	.315(**)	.289(**)
Personal experience	.240(*)	.282(**)	.240(*)	.265(**)	.313(**)	1	.344(**)	.357(**)
Responsibility	.296(**)	.206(*)			.315(**)	.344(**)	1	.647(**)
Harm/Loss	.342(**)	.254(**)			.289(**)	.357(**)	.647(**)	1
Pre-warned	.213(*)	.201(*)	.188(*)			.202(*)		.206(*)
Disaster news			.286(**)		.290(**)			
Repeated ads	.198(*)	.355(**)	.382(**)	.309(**)	.235(*)	.281(**)	.246(**)	
Fairs		.364(**)	.386(**)	.337(**)	.336(**)	.474(**)	.216(*)	
Kit availability	.223(*)	.450(**)	.400(**)	.330(**)	.424(**)	.302(**)		
Anniversaries		.253(**)	.299(**)	.317(**)	.387(**)	.275(**)		
Frequent govt. reminders		.380(**)	.383(**)					
Seasonal reminders	.321(**)	.484(**)	.426(**)		.292(**)	.311(**)		

Motivator	Pre-warned	Disaster news	Repeated ads	Fairs	Kit availability	Anniversaries	Frequent govt. reminders	Seasonal reminders
Fear	.213(*)		.198(*)		.223(*)			.321(**)
Peace of mind	.201(*)		.355(**)	.364(**)	.450(**)	.253(**)	.380(**)	.484(**)
Security	.188(*)	.286(**)	.382(**)	.386(**)	.400(**)	.299(**)	.383(**)	.426(**)
Self-reliance			.309(**)	.337(**)	.330(**)	.317(**)		
Help others		.290(**)	.235(*)	.336(**)	.424(**)	.387(**)		.292(**)
Personal experience	.202(*)		.281(**)	.474(**)	.302(**)	.275(**)		.311(**)
Responsibility			.246(**)	.216(*)				
Harm/Loss	.206(*)							
Pre-warned	1							
Disaster news		1	.641(**)	.486(**)	.337(**)	.562(**)	.468(**)	.469(**)
Repeated ads		.641(**)	1	.550(**)	.499(**)	.562(**)	.668(**)	.584(**)
Fairs		.486(**)	.550(**)	1	.484(**)	.660(**)	.505(**)	.513(**)
Kit availability		.337(**)	.499(**)	.484(**)	1	.473(**)	.353(**)	.481(**)
Anniversaries		.562(**)	.562(**)	.660(**)	.473(**)	1	.519(**)	.490(**)
Frequent govt. reminders		.468(**)	.668(**)	.505(**)	.353(**)	.519(**)	1	.621(**)
Seasonal reminders		.469(**)	.584(**)	.513(**)	.481(**)	.490(**)	.621(**)	1

*Results significant at $p=.05$

**Results significant at $p=.01$

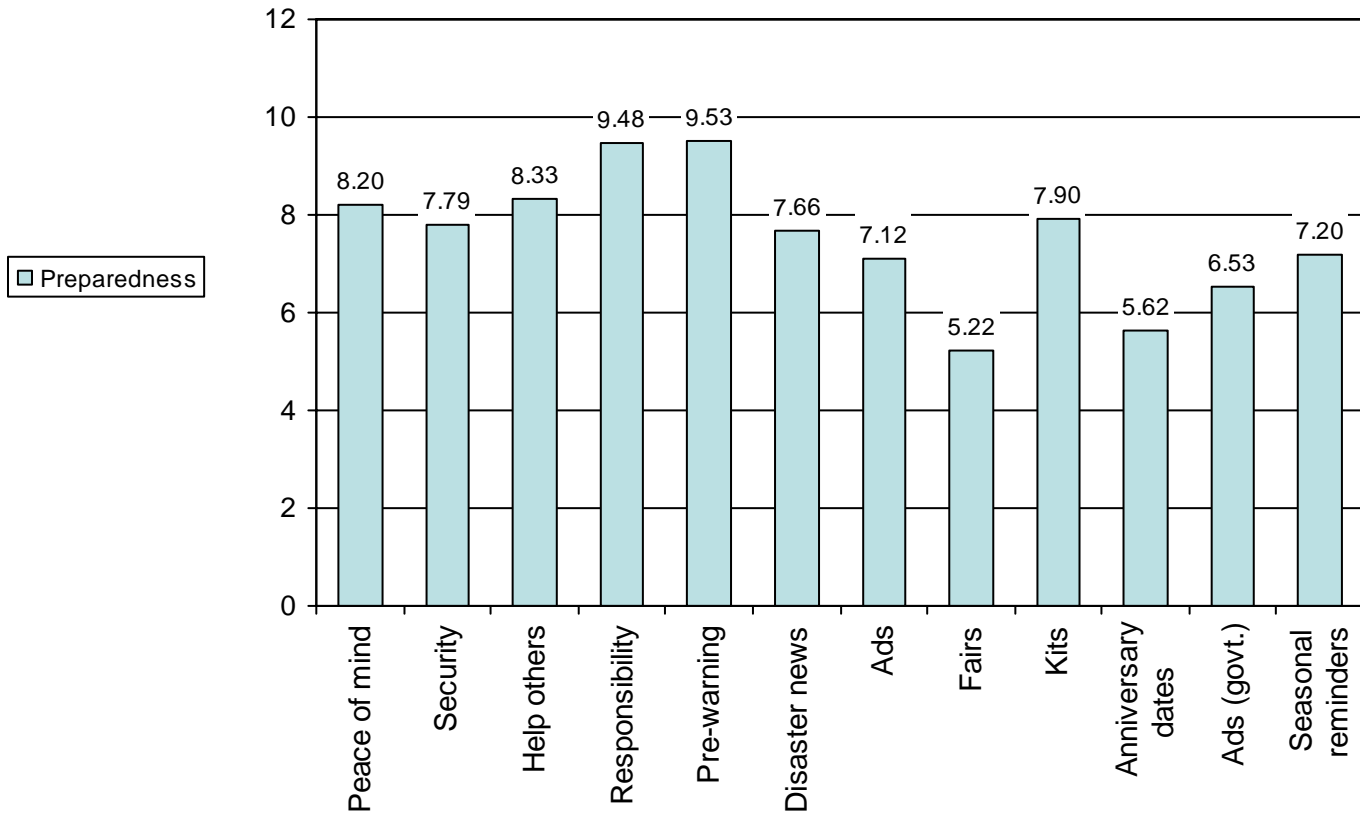
High positive correlations were noted between:

- Responsibility towards family and loved ones is highly correlated with preventing harm/loss of loved ones ($r=.647$)
- News about disasters is highly correlated with anniversary dates of disasters ($r=.562$) and repeated advertisements and messages ($r=.641$)
- Repeated ads and messages are highly correlated with promotional events like fairs ($r=.550$), anniversary dates of disasters ($r=.562$), frequent government ads and messages ($r=.668$) and seasonal reminders of disasters ($r=.584$)
- Promotional events like fairs are highly correlated with anniversaries of disasters ($r=.660$), frequent government reminders ($r=.505$) and seasonal reminders about disasters ($r=.513$)
- Anniversaries of previous disasters are highly correlated with frequent government reminders ($r=.519$)
- Frequent government reminders are highly correlated with messages and seasonal reminders ($r=.621$)

Motivational Triggers by Ethnic Origins for African-Americans

The top 3 motivational triggers for Asians that emerged are (descending order): pre-warning (mean=9.53), responsibility towards family and loved ones (mean=9.48) and to be able to help others during a disaster/emergency (mean=8.33).

The graph below sums up the results:



Motivational Triggers for African Americans –Correlation Scores

Motivator	Fear	Peace of mind	Security	Self-reliant	Help others	Responsibility	Per-warning
Fear	1	.431(**)			.323(*)		
Peace of mind	.431(**)	1	.495(**)	.473(**)	.454(**)	.318(*)	
Security		.495(**)	1	.407(**)	.323(*)	.331(*)	
Self-reliant		.473(**)	.407(**)	1		.417(**)	.341(*)
Help others	.323(*)	.454(**)	.323(*)		1	.350(*)	
Responsibility		.318(*)	.331(*)	.417(**)	.350(*)	1	
Per-warning				.341(*)			1
Disaster news	.371(**)	.359(*)			.371(**)		
Repeated ads	.519(**)						
Fairs	.301(*)		.322(*)				
Kit availability		.391(**)	.331(*)				
Anniversary dates	.431(**)						
Govt. reminders	.400(**)		.385(**)				
Seasonal reminders	.328(*)		.300(*)				

Motivator	Disaster news	Repeated ads	Fairs	Kit availability	Anniversary dates	Govt. reminders	Seasonal reminders
Fear	.371(**)	.519(**)	.301(*)		.431(**)	.400(**)	.328(*)
Peace of mind	.359(*)			.391(**)			
Security			.322(*)	.331(*)		.385(**)	.300(*)
Self-reliant							
Help others	.371(**)						
Responsibility							
Per-warning							
Disaster news	1	.525(**)			.345(*)	.367(*)	
Repeated ads	.525(**)	1	.441(**)		.650(**)	.630(**)	.453(**)
Fairs		.441(**)	1	.493(**)	.346(*)	.370(*)	.327(*)
Kit availability			.493(**)	1		.471(**)	.498(**)
Anniversary dates	.345(*)	.650(**)	.346(*)		1	.595(**)	.479(**)
Govt. reminders	.367(*)	.630(**)	.370(*)	.471(**)	.595(**)	1	.700(**)
Seasonal reminders		.453(**)	.327(*)	.498(**)	.479(**)	.700(**)	1

*Results significant at $p=.05$

**Results significant at $p=.01$

High positive correlations were noted between:

- Fear is highly correlated with repeated ads ($r=.519$)
- News about disasters is highly correlated with repeated advertisements and messages ($r=.525$)
- Repeated ads and messages are highly correlated with anniversary dates of disasters ($r=.650$) and frequent government reminders and messages ($r=.630$)

- Frequent government reminders are highly correlated with anniversaries of previous disasters ($r=.595$)
- Government reminders are highly correlated with seasonal reminders of past disasters ($r=.700$)

Awareness about 3 days 3 ways & Affect

Awareness about the 3 days 3 ways campaign was asked in 2 ways: unaided and aided.

In the unaided scenario, respondents were simply asked if they were aware of the campaign. In the unaided scenario, the respondents were told about the campaign and then they were asked if they recalled hearing the campaign.

The following information was provided to them in the aided scenario:

3 Days 3 Ways is an Office of Emergency Management public education campaign that seeks to spread awareness about the need to be ready to survive on your own for a minimum of 3 Days following a disaster. The 3 Ways or steps to prepare for an emergency/disaster are: make a plan, build an emergency kit, and get involved, both at the family/individual level and with the community.

In all, 39.1% demonstrated unaided awareness about the campaign. An additional 17.3% recalled hearing the campaign when they were told about it. Thus, in all a total of more than half the respondents (56.4%) were aware of the campaign in general.

This is a significant improvement over 2006, where only 5.5% of the respondents were aware of the 3 days 3 ways campaign.

The following two charts on the next page provide the geographic distribution of the awareness (unaided) and recall (aided) of 3days3ways campaign.

Awareness about 3days3ways:

Awareness of 3 days 3 ways		
	Yes (% respondents)	No (% respondents)
Montlake	26.7%	73.3%
Magnolia	38.6%	61.4%
Ballard	56.8%	43.2%
Queen Anne	31.0%	69.0%
West Seattle	46.6%	53.4%
Downtown Seattle	18.8%	81.3%
Other/North Seattle	37.3%	61.0%
Rainier/Columbia	33.3%	66.7%
Madison Valley	56.0%	44.0%
International Dist.	40.9%	59.1%
Central Dist.	39.6%	60.4%
Northgate	33.9%	64.3%
Beacon Hill	41.2%	52.9%
Eastside Lake WA	39.7%	60.3%
Eastside Rural Cities	34.3%	65.7%
Incorporated S. County	36.2%	61.9%
Unincorporated area	45.9%	52.5%

Recalled having heard the 3days3ways campaign:

Recalled having heard 3days3ways		
	Yes (% respondents)	No (% respondents)
Montlake	18.8%	81.3%
Magnolia	34.3%	65.7%
Ballard	26.3%	68.4%
Queen Anne	26.3%	73.7%
West Seattle	25.8%	71.0%
Downtown Seattle	30.8%	69.2%
Other/North Seattle	33.3%	63.9%
Rainier/Columbia	34.4%	65.6%
Madison Valley	36.4%	63.6%
International Dist.	28.6%	71.4%
Central Dist.	25.0%	75.0%
Northgate	25.0%	69.4%
Beacon Hill	15.0%	85.0%
Eastside Lake WA	28.0%	69.5%
Eastside Rural Cities	39.1%	60.9%
Incorporated S. County	34.3%	64.2%
Unincorporated area	18.2%	81.8%

Respondents were also asked where they learnt about it. More than one-third (39.3%) said they had seen it on TV.

The table below summarizes the results:

Medium	% Respondents
TV	39.3%
Other	17.5%
Radio	14.8%
Community presentations	11.7%
Word of mouth	3.3%
Magazines	2.3%
Internet	1.7%
Safety fairs	0.7%
Refused/Don't Know	8.8%
Total	100%

The “other” places where respondents had learned about the campaign were as follows:

Responses	% respondents
Bus	40%
Newspapers	25%
School	7%
Brochures/mailers/flyers	6%
Work	6%
Organizations	3%
Billboards	2%
Neighborhood watch/meetings	2%
Grocery stores	2%
Family members	2%
Training	2%
Posters	2%
Firestation	1%
Magazine	1%
Radio	1%
TV	1%

N.B. Total percentages are more than 100, as some respondents provided multiple answers

The 2 most frequently cited newspapers where the respondents had read about the campaign and/or had seen an advertisement were The Seattle Times and Seattle Post Intelligence.

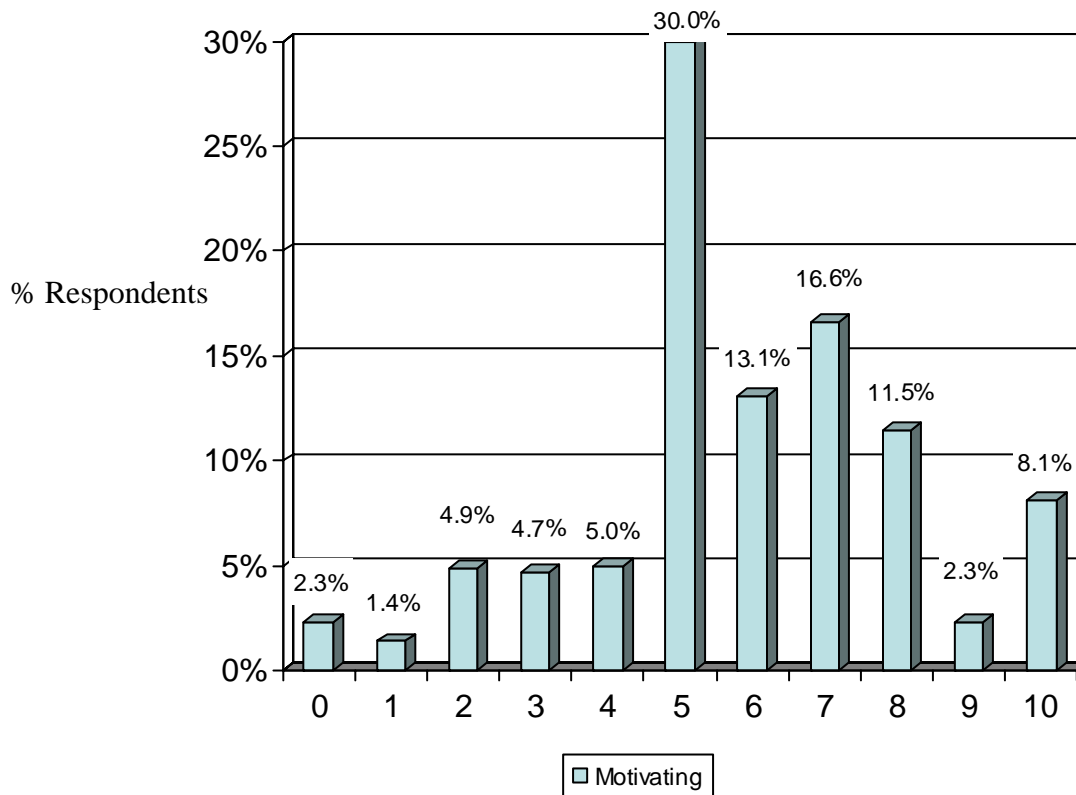
Respondents were also asked a series of questions in order to understand how motivating they felt the campaign was and whether they felt it reasonable/doable to prepare an emergency kit for 3 days. The next few sections discuss the results in detail.

Motivational Impact of 3 days 3 ways

Respondents were asked to rate on a 0-10 scale how motivating they found the campaign, where 0 denoted “not motivating at all” and 10 denoted “highly motivating”.

The mean score across the respondents in general, was moderate at 5.84. About one-fifth (21.9%) gave it a high rating of 8-10.

The graph below sums up the responses:



Further analysis:

A discriminant analysis was conducted in order to understand how motivational triggers like fear, responsibility towards family and loved ones, etc. and some spokespersons like children, elderly, etc. would predict how motivating respondents thought the campaign was.

A negative discriminant score predicts an inverse/opposite reaction. As seen in the table below, the more the respondents felt the campaign was motivating, the less likely would celebrities as spokespersons be motivating (discriminant coefficient = $-.245$). Likewise, the more the respondents felt the campaign was motivating, the more motivating frequent and repeated reminders from government agencies would be for them (discriminant coefficient = $.503$)

The table below sums up the responses:

Motivational trigger predicting emergency preparedness	Discriminant coefficient
Frequent and repeated reminders from government agencies	0.503
Elderly	0.295
Elected officials (state & local)	0.243
Disabled	0.197
Anniversary dates of previous disasters	0.196
Representatives from the American Red Cross	0.185
Survivors of disasters	0.154
The need to be self sufficient / self reliant	0.150
The need for security in case of a disaster	0.117
The need to have peace of mind in case of a disaster	0.106
Officials such firefighters, police, or EMS	0.101
Responsibility towards family and loved ones	0.086
Children	0.060
Pre-warned about a disaster	0.049
Repeated advertisements/ messages about the need to be prepared	0.049
Prevent harm or loss of a loved one	0.039
Promotional and public events like fairs	0.026
Officials from local government, such as county Office of Emergency Management	0.009
The availability of convenient emergency kits in the market	-0.015
Seasonal reminders	-0.015
Personal experience of suffering a disaster	-0.019
News about disasters (E.g. Katrina; latest collapse of a Minneapolis interstate bridge)	-0.040
TV newscasters	-0.165
Fear	-0.224
Celebrities	-0.245
The need to be in a position to help others	-0.345
Community leaders (Church pastors, etc.)	-0.353

Results are significant at $p=.000$; Eigenvalue=.200; correlation=.409; Wilks' Lambda=.833

Achievable/Doable Perception of a Kit for 3 Days

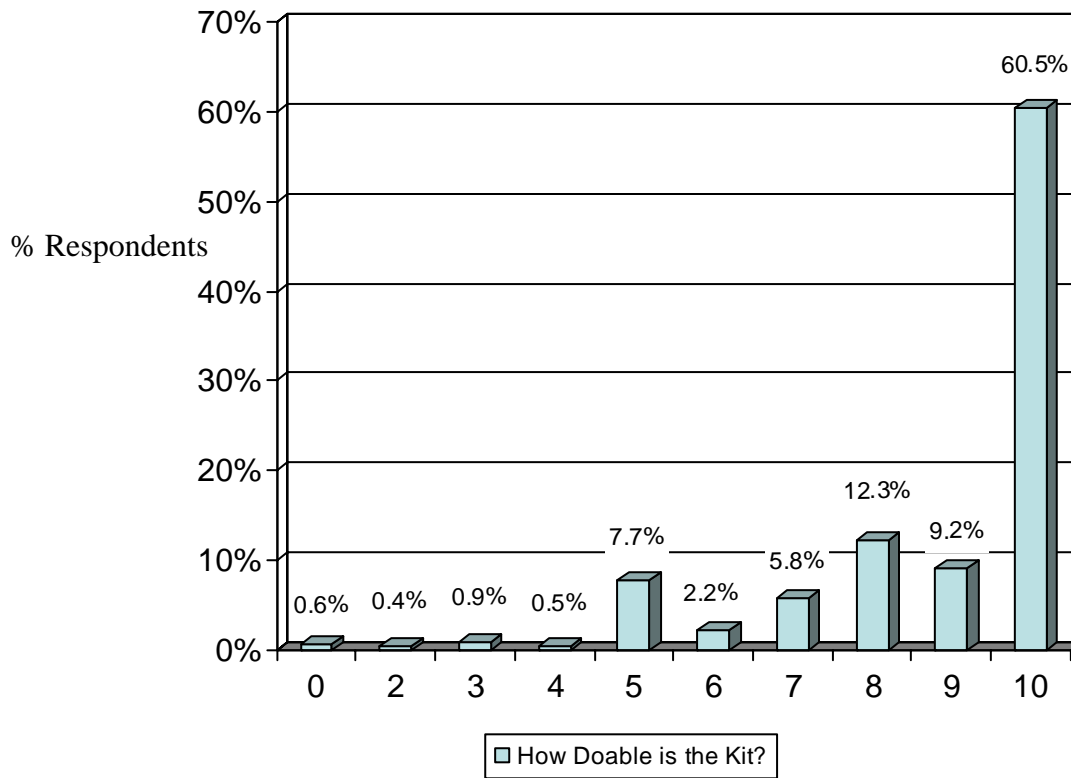
Respondents were also asked to rate on a 0-10 scale how achievable/doable they found the idea of preparing an emergency kit for 3 days was, as recommended by the campaign. The scale was defined as follows: 0 denoted “not at all doable” and 10 denoted “highly doable”.

The mean score across the respondents was high at 8.83. A high Kurtosis score of 3.598 suggests that the responses were highly consensual in their responses, and as can be seen in the graph below, a majority of the responses were clustered mostly around 10 (60.5%).

This implies that the respondents in general found that preparing an emergency kit for 3 days was highly achievable/ doable. A high score such as this also suggests that given that preparing an emergency kit for 3 days is considered highly doable by the respondents, the kit per se is not a potential impediment/bottleneck as a first step towards disaster preparation.

Also, given that respondents in general felt that an emergency kit should have supplies for a mean rating of 6.02 days, preparing a kit for 3 days would be perceived by them as being highly doable.

The graph below sums up the responses:



Respondents were also asked to indicate why or why not they felt the kit was doable. The following responses were noted regarding their attitude towards preparing an emergency kit for 3 days:

Attitudes about preparing a kit	
Responses	% respondents
It's easy to do	40%
I am already prepared/have a plan/have supplies	40%
Being prepared is important to do	11%
Not motivated enough to prepare a kit	10%
Have had personal experience	2%
It is inexpensive	1%
Don't know what goes in a kit	2%
No urgency	2%
None in car	1%
Expensive	1%

N.B. Total percentages are more than 100, as some respondents provided multiple answers

Preparedness Spokespersons: Communication Perspective

Closely related to the theme of motivation to prepare for emergencies and analyzing the effectiveness of public service advertising about the importance of emergency preparedness is to understand the kinds of spokespersons who could make a campaign more effective.

Respondents were asked to rate on a 0-10 scale how effective they believed the following persons would be in persuasively motivating them to be better prepared for a disaster. The scale was operationalized as follows: 0 means “Not effective at all” and 10 means “Extremely effective”.

The list of spokespersons, once again emerged from the findings of the focus groups. They were as follows:

- Children
- Celebrities, such as actors or sports figures
- Officials such firefighters, police, or Emergency Medical Services (EMS)
- TV newscasters
- Elected officials (state & local)
- Officials from local government, such as county Office of Emergency Management
- Representatives from the American Red Cross
- Community leaders (Church pastors, etc.)
- Survivors of disasters
- Elderly
- Disabled

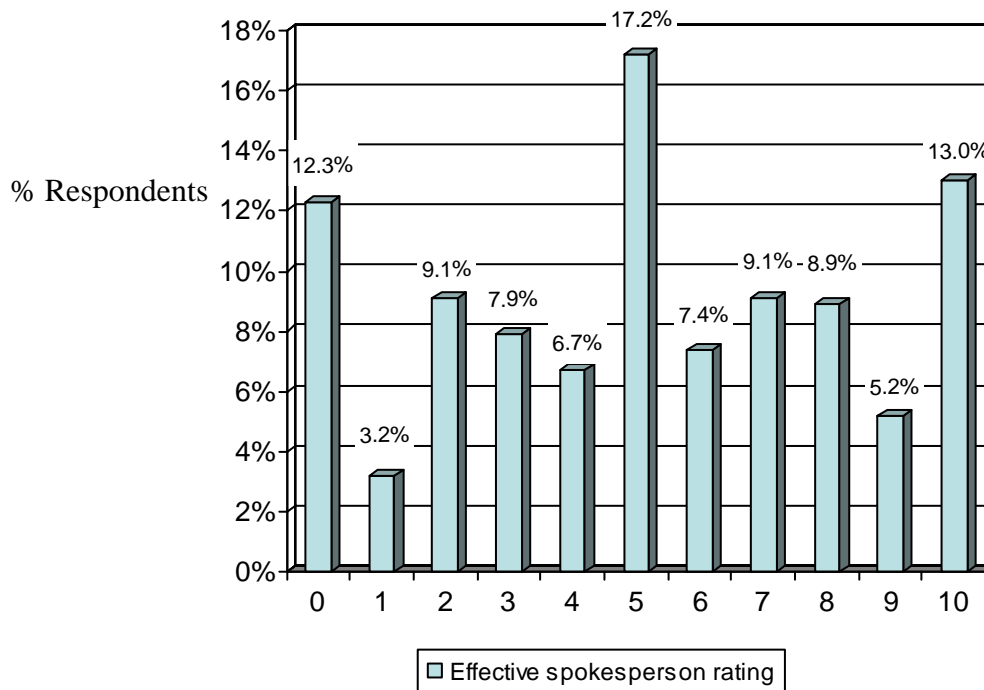
The next few sections sum up the responses for the aforementioned spokespersons.

Children as Preparedness Spokespersons

Children as spokespersons were rated moderately at 5.14. Less than one-third of the respondents (27.1%) gave a high rating (8-10).

A Kurtosis score of -1.066 suggests that the responses were highly varied and not clustered around the mean rating.

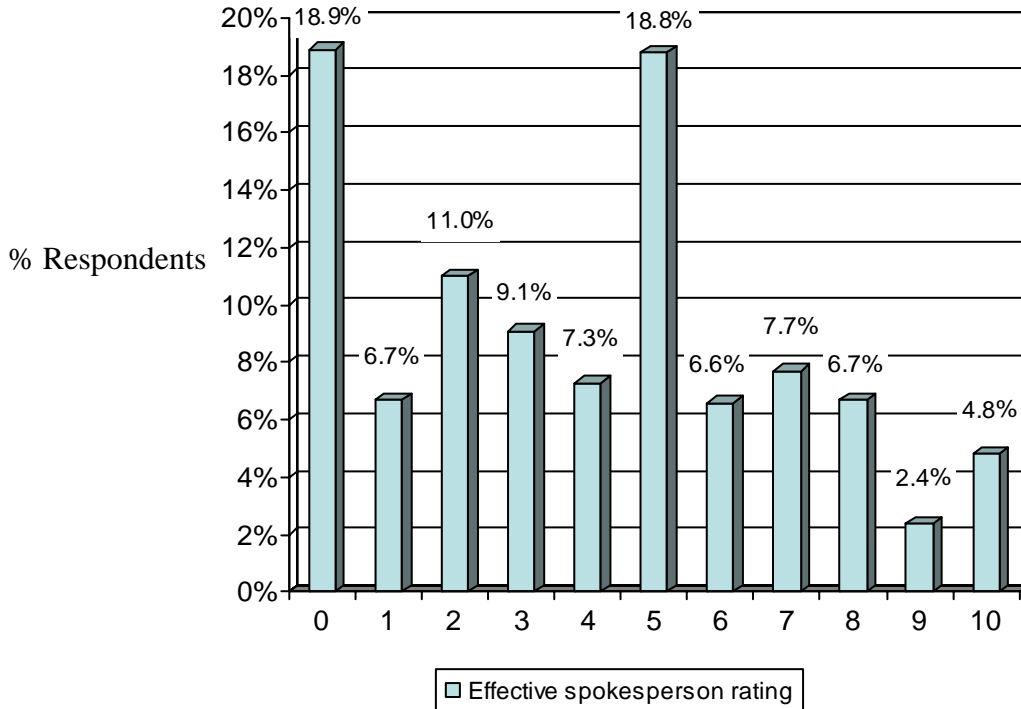
“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”



Celebrities as Preparedness Spokespersons

The overall mean rating for using celebrities as emergency preparedness spokespersons was low at 3.96.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

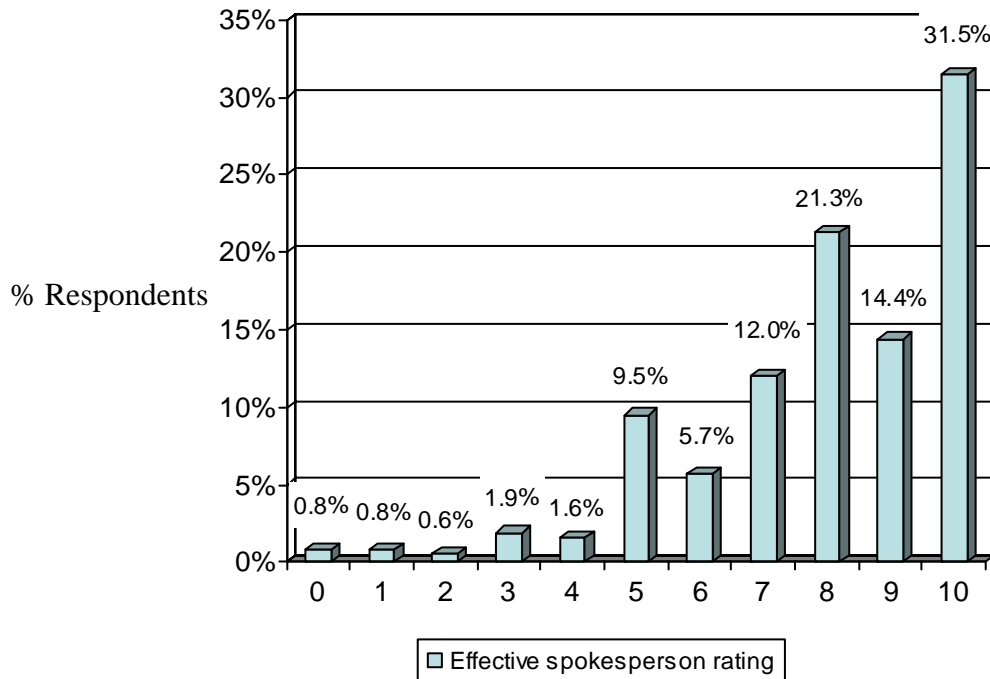


Officials: Firefighters/EMS Officials as Preparedness Spokespersons

The overall mean for using firefighters and other EMS officials as emergency preparedness spokespersons was high at 7.95. More than half the respondents (67.2%) perceived them to be highly effective (8-10) emergency preparedness spokespersons.

A high Kurtosis score of 1.432 indicates that most of the responses lay close to the mean rating and were highly homogenously clustered closer to 8-10.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

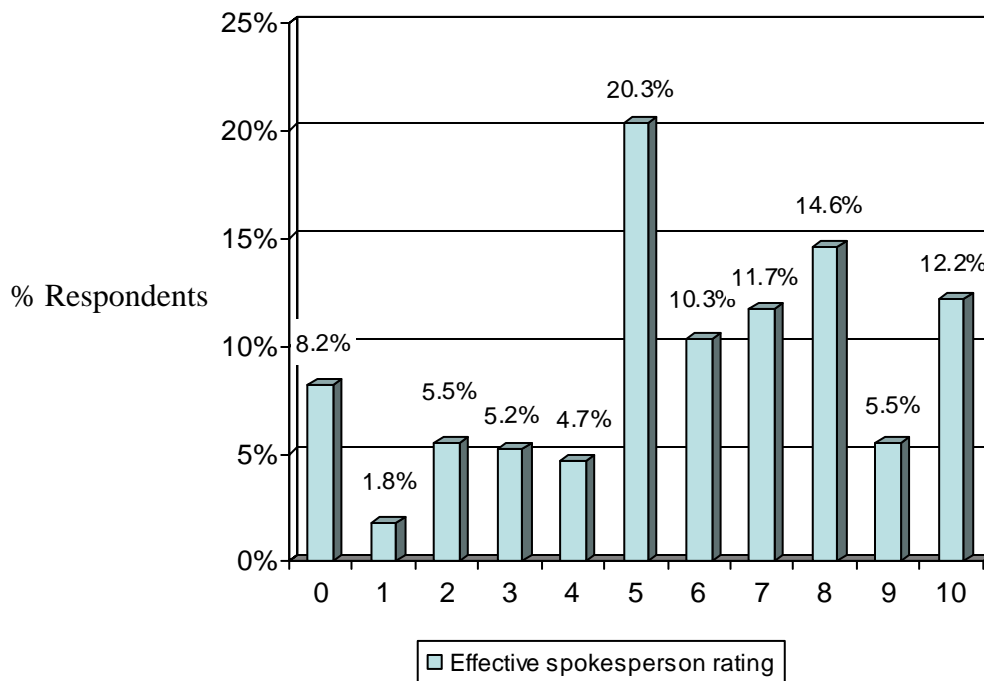


TV Newscasters as Preparedness Spokespersons

The overall mean for using TV newscasters as emergency preparedness spokespersons was moderate at 5.8. More than a third of the respondents (32.2%) perceived them to be highly effective (8-10) emergency preparedness spokespersons.

The Kurtosis score was $-.572$, indicating lesser consensus of TV newscasters as being motivating spokespersons among the respondents.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

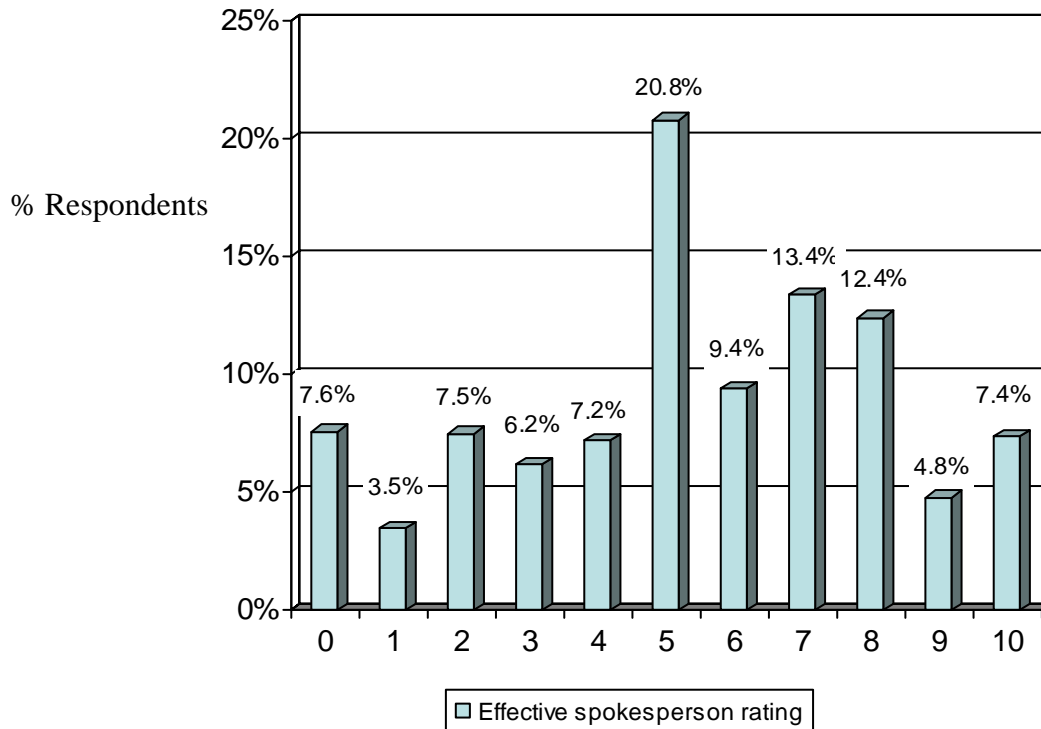


Elected Officials (State & Local) as Preparedness Spokespersons

The overall mean for using elected officials (state and local) as emergency preparedness spokespersons was moderate at 5.36.

The Kurtosis score was $-.681$, indicating lesser consensus of TV newscasters as being motivating spokespersons among the respondents.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

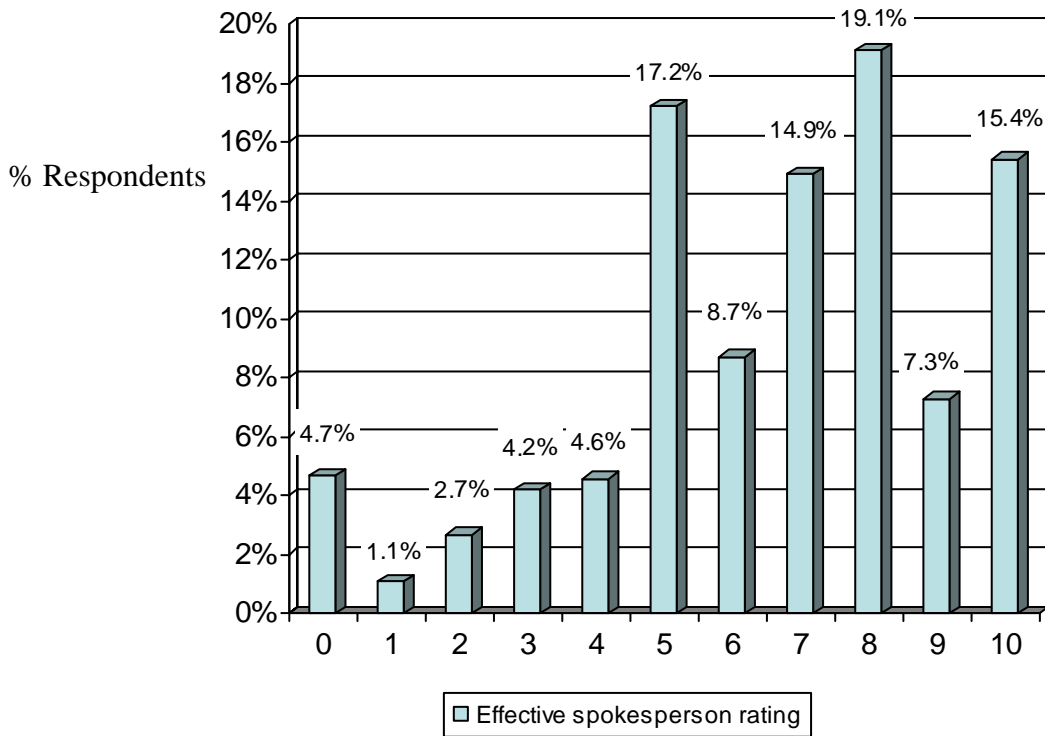


Officials From Local Governments as Preparedness Spokespersons

The overall mean for using officials from local government as emergency preparedness spokespersons was moderately high at 6.53. About half the respondents (41.9%) gave a rating of 8-10, indicated that they were highly effective spokespersons.

The Kurtosis score was .006, indicating high consensus of officials from locally elected governments such as OEM spokespersons as being motivating spokespersons among the respondents.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

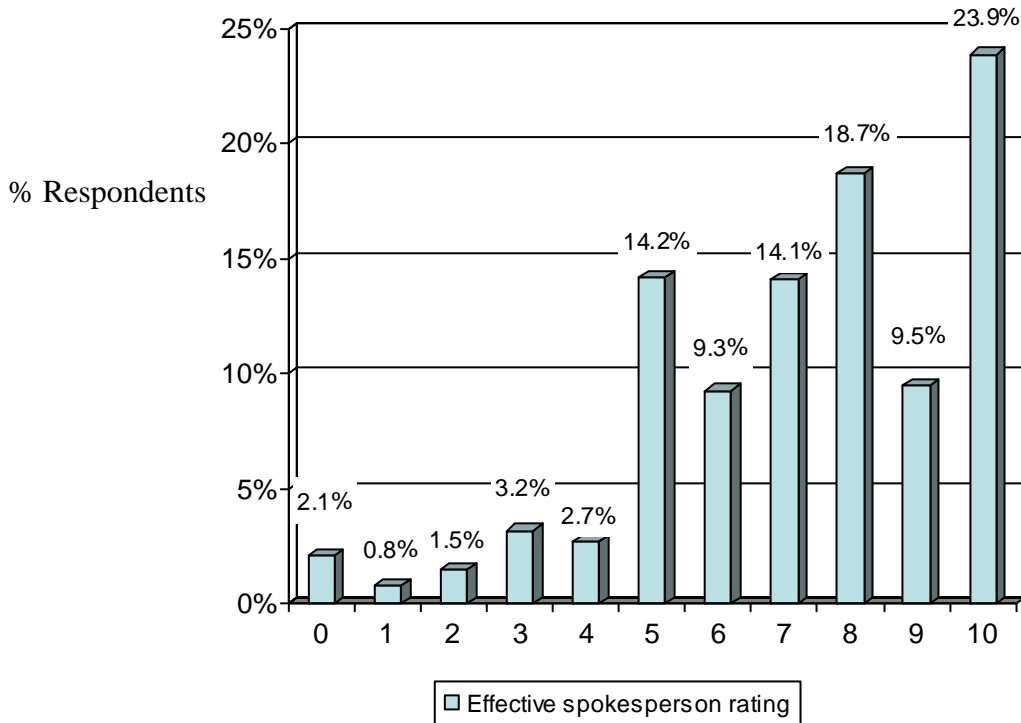


American Red Cross Representatives & EMS Officials as Preparedness Spokespersons

The overall mean for using officials from the American Red Cross as emergency preparedness spokespersons was moderately high at 7.24. More than half the respondents (52.1%) gave a rating of 8-10, indicated that they were highly effective spokespersons.

The Kurtosis score was .398, indicating high consensus of American Red Cross officials as being motivating spokespersons among the respondents.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

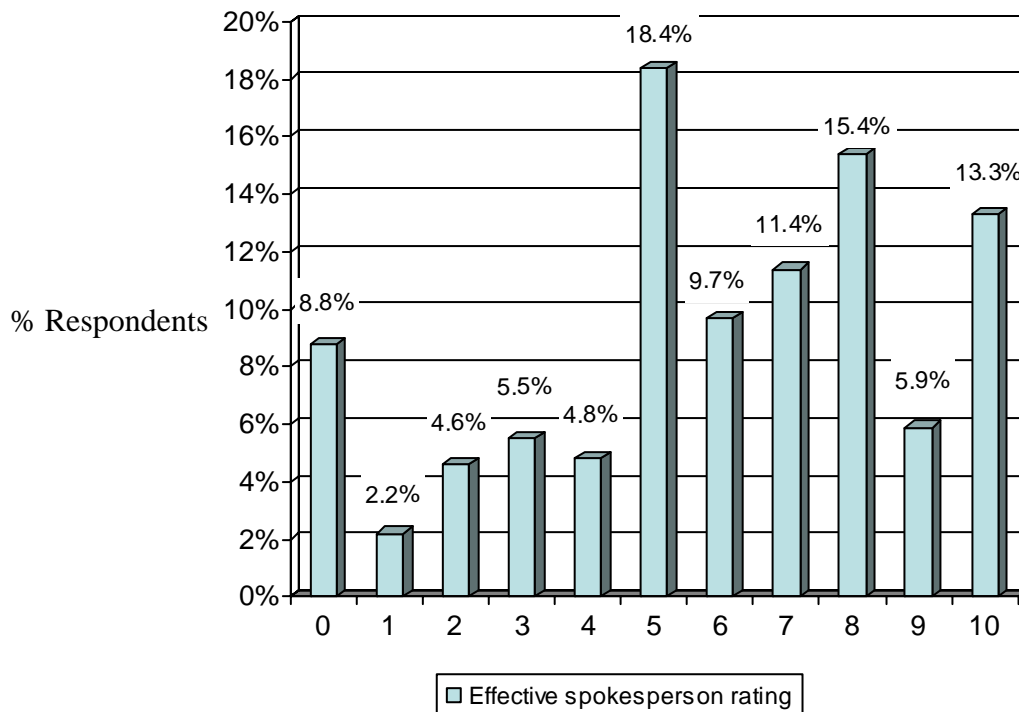


Community Leaders as Preparedness Spokespersons

The overall mean for using community leaders such as Church pastors as emergency preparedness spokespersons was moderate at 5.87.

A high negative Kurtosis score of $-.627$ indicates that the responses were heterogeneously clustered far from the mean rating, indicating a lack of consensus/unanimity among the respondents.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”



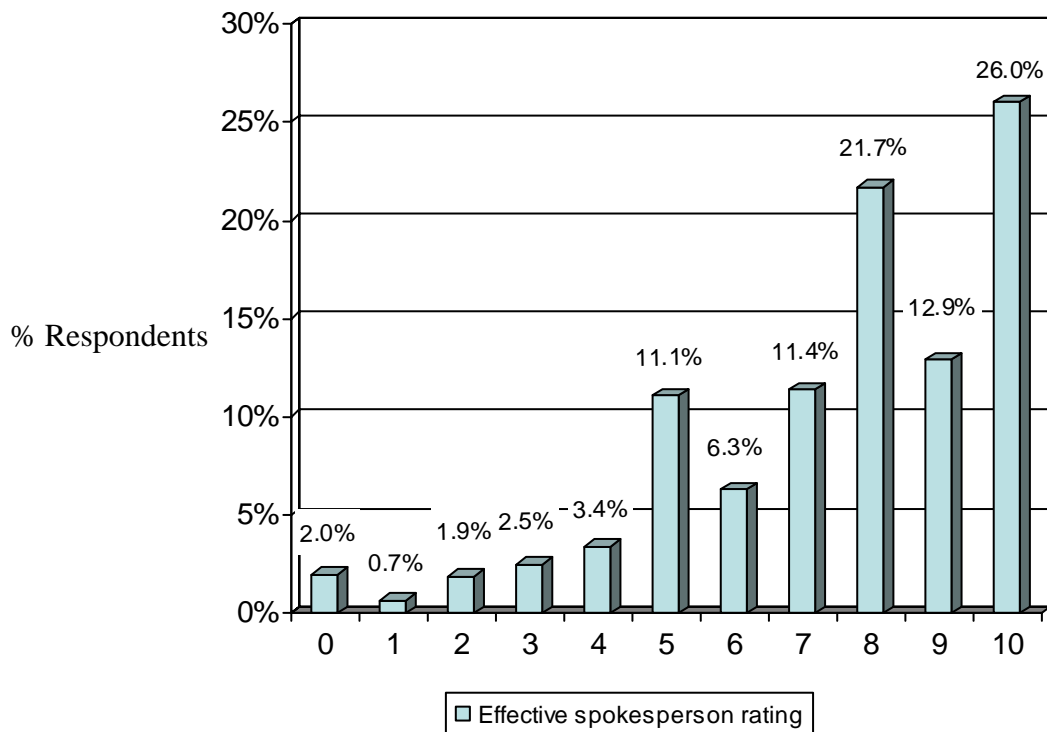
Survivors of Disasters as Preparedness Spokespersons

The overall mean for using survivors of disasters as emergency preparedness spokespersons was moderately high at 7.48.

More than half the respondents (60.6%) gave a high rating (8-10) indicating that they found survivors of disasters as effective spokespersons of emergency preparedness.

A high positive Kurtosis of .734 indicates uniformity and consensus of responses among the respondents. A high clustering was noted between 8-10.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

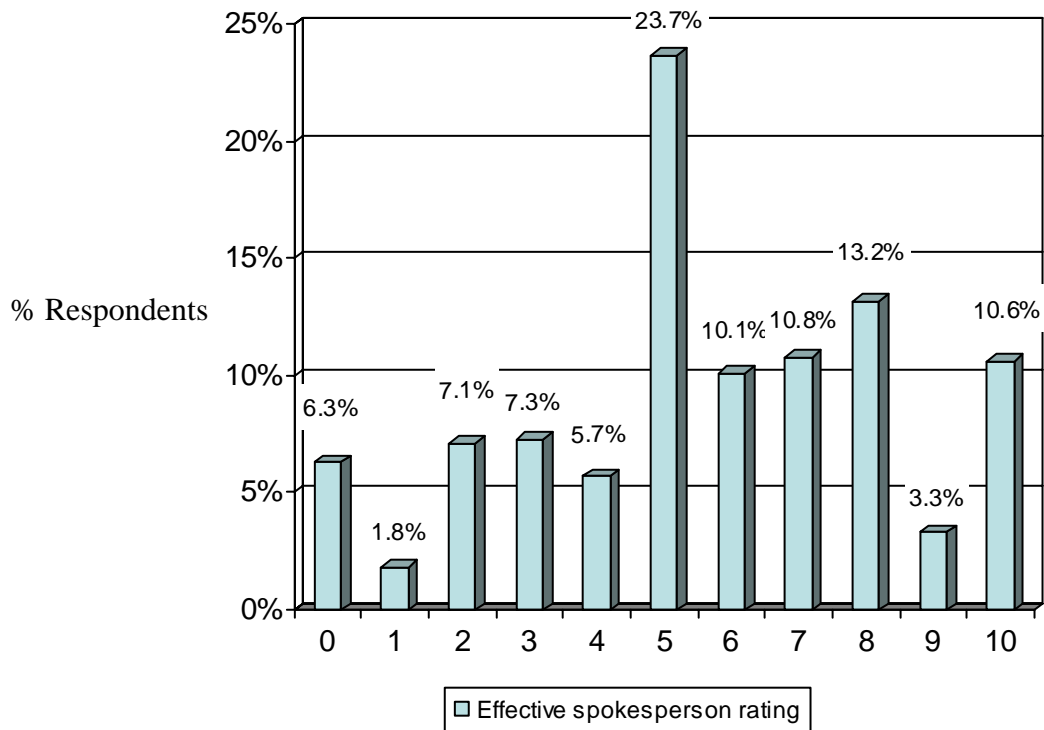


Elderly as Preparedness Spokespersons

The overall mean for using the elderly as emergency preparedness spokespersons was moderate at 5.57. More than one-quarter of the respondents (27.1%) nonetheless, gave a high rating (8-10) indicating that they found them effective spokespersons of emergency preparedness.

A high negative Kurtosis score of $-.564$ indicates that there was lack of consensus among the respondents where using elderly as preparedness spokespersons was concerned.

“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”

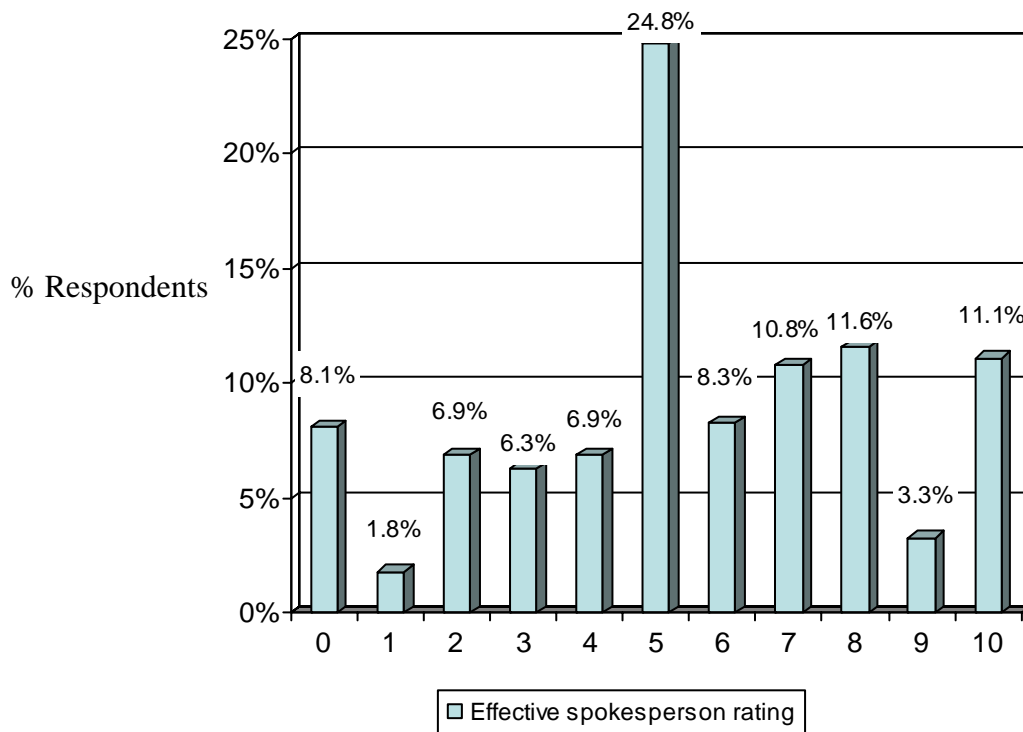


Disabled as Preparedness Spokespersons

The overall mean for using disabled people as emergency preparedness spokespersons was moderate at 5.45. About one-quarter of the respondents (26%) gave a high rating (8-10) indicating that they found them effective spokespersons of emergency preparedness.

A negative Kurtosis score of -.616 indicates that there was lack of consensus among the respondents where using disabled as preparedness spokespersons was concerned.

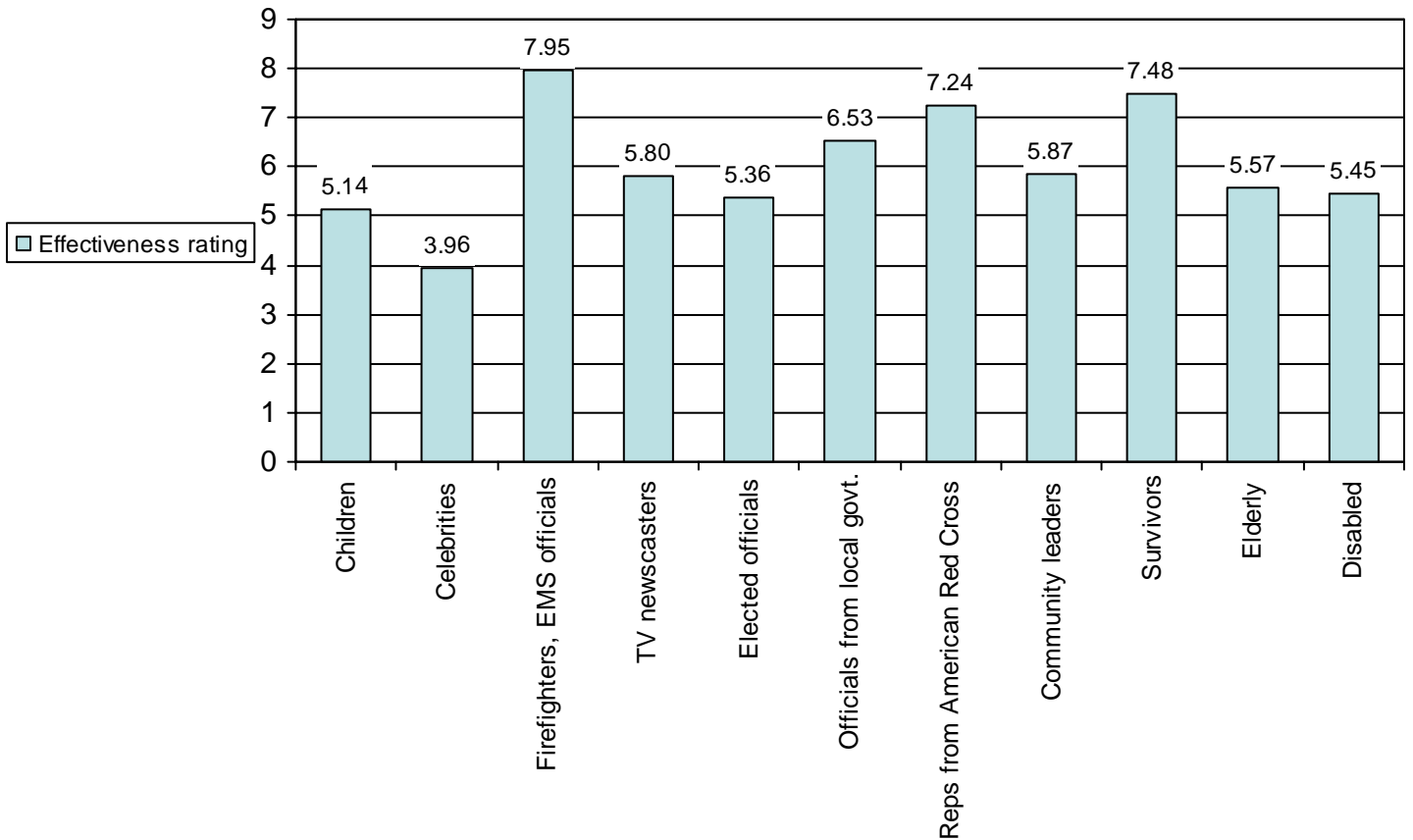
“On a scale from 0-10 how effective do you think this person would be as a communicator to motivate you to be better prepared for a disaster? Use a scale from 0-10 where 0 means “not effective at all” and 10 means “extremely effective”.”



Preparedness Spokespersons: To Sum Up

The graph below sums up the average mean scores of the various spokespersons in general, as discussed in the previous section.

The graph below sums up the responses:



Thus, the top 3 motivating spokespersons promoting emergency preparedness that emerged were (in descending order): firefighters/EMS officials, survivors of disasters and representatives from the American Red Cross.

Preparedness Spokespersons: Ethnic Differences

In order to further index the motivational triggers, a multivariate analysis was conducted by ethnicity in order to assess which of the aforementioned spokespersons would be significantly different by ethnicity.

The 4 ethnicities that were analyzed were:

- Caucasian
- Hispanic/Latino
- Asian
- African-American

Given that our values and behavior impact who we consider as effective spokespersons are in turn, largely dependent on our cultural and ethnic background. This analysis is one way to further fine tune the preparedness index by segmenting spokespersons by ethnicities.

By understanding who different ethnicities believe should be disaster preparedness spokespersons, this analysis would further provide statistically generalizable differentiators of message content in creating the motivation to prepare for disasters for different ethnicities.

Significant differences were seen in the case of the following spokespersons:

- Children
- Celebrities
- Firefighters/ EMS officials
- TV newscasters
- Elected state and local officials
- Representatives from American Red Cross
- Community leaders (Church pastors, etc.)
- Survivors of disasters
- Elderly
- Disabled

The results are as follows:

Children as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of children as spokespersons of disaster preparedness. For those of Hispanic/Latino origins they emerged as moderately high effective spokespersons (mean=6.41).

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	4.84
Hispanic/Latino	6.41
Asian	5.55
African-American	6.31

(Results were significant at $p=.000$)

Celebrities as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of celebrities as spokespersons of disaster preparedness. Though the mean ratings were generally moderate, celebrities as spokespersons scored highest for African-Americans (mean=5.18).

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	3.64
Hispanic/Latino	4.86
Asian	4.79
African-American	5.18

(Results were significant at $p=.000$)

Firefighters/EMS officials as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of firefighters/EMS officials as spokespersons of disaster preparedness. Though the mean ratings were generally high, firefighters/EMS officials as spokespersons scored highest for African-Americans (mean=8.7).

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	7.87
Hispanic/Latino	8.57
Asian	7.81
African-American	8.7

(Results were significant at $p=.004$)

TV newscasters as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of TV newscasters as spokespersons of disaster preparedness. The mean ratings ranged from moderate to moderately high.

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	5.45
Hispanic/Latino	6.74
Asian	6.57
African-American	7.22

(Results were significant at $p=.000$)

Elected officials (State & Local) as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of elected officials as spokespersons of disaster preparedness. The mean ratings ranged from moderate to moderately high.

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	5.18
Hispanic/Latino	5.5
Asian	5.91
African-American	6.02

(Results were significant at $p=.044$)

American Red Cross representatives as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of American Red Cross representatives as spokespersons of disaster preparedness. The mean ratings ranged from moderately high to very high. The highest rating was seen for those of Hispanic/Latino origins at 8.23

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	7
Hispanic/Latino	8.23
Asian	7.73
African-American	7.83

(Results were significant at $p=.000$)

Community leaders (Church pastors, etc.) as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of community leaders as spokespersons of disaster preparedness. The mean ratings ranged from moderate to moderately high.

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	5.62
Hispanic/Latino	6.2
Asian	6.56
African-American	7.02

(Results were significant at $p=.001$)

Survivors of disasters as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of survivors of disasters as spokespersons of disaster preparedness. The mean ratings ranged from moderately high to very high.

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	7.32
Hispanic/Latino	8.13
Asian	7.66
African-American	8.24

(Results were significant at $p=.012$)

Elderly as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of elderly as spokespersons of disaster preparedness. The mean ratings ranged from moderately high to very high.

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	5.27
Hispanic/Latino	6.38
Asian	6.08
African-American	6.98

(Results were significant at $p=.000$)

Disabled as spokespersons:

Significant differences were noted among the different ethnicities regarding the use of disabled people as spokespersons of disaster preparedness. The mean ratings ranged from moderately high to very high.

The table below sums up the results:

Ethnicity	Mean Score
Caucasian	5.1
Hispanic/Latino	6.81
Asian	5.88
African-American	6.88

(Results were significant at $p=.000$)

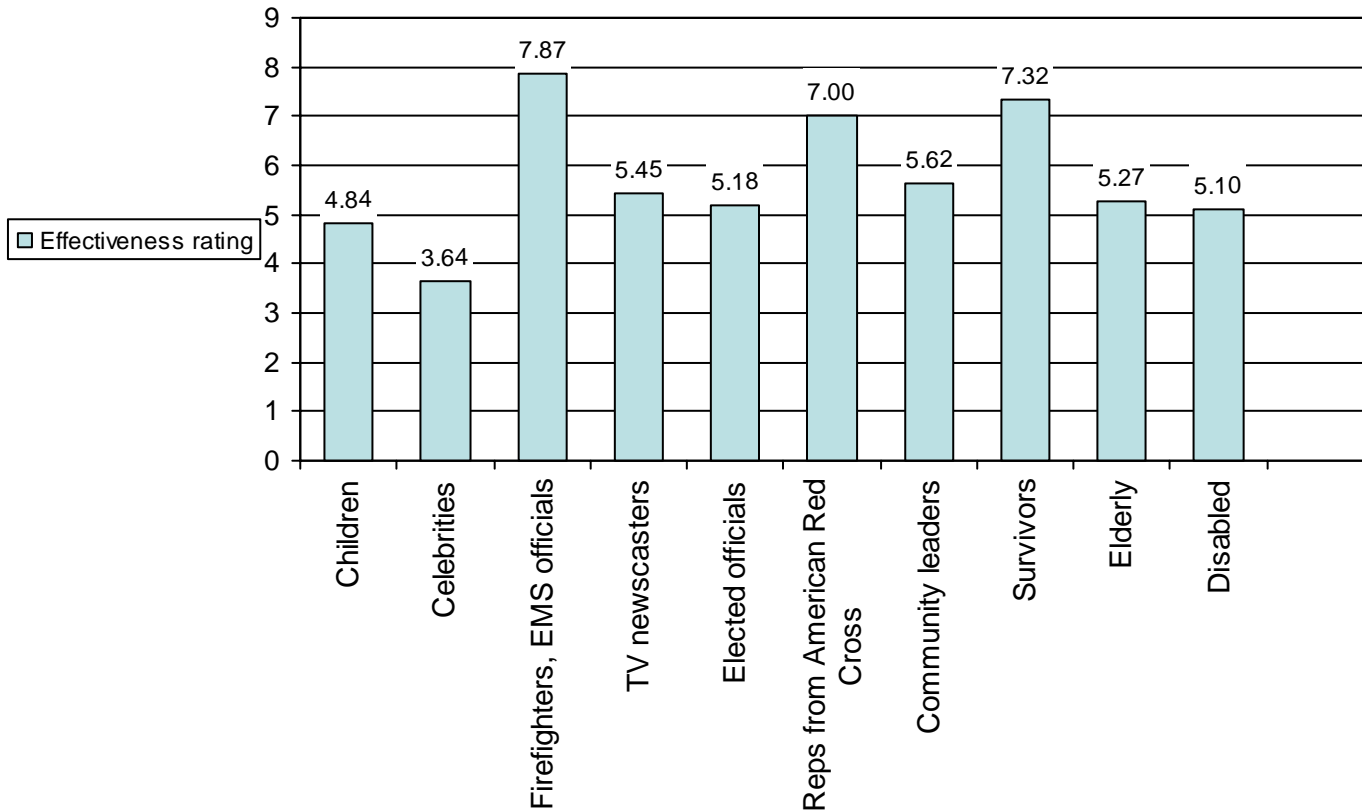
To sum up, it was found that firefighters/EMS officials, survivors of disasters and American Red Cross representatives were largely considered to be effective spokespersons of disaster preparedness by all 4 ethnicities, however, with varying degrees of intensity.

The following sections represent the mean scores by ethnicity.

Preparedness Spokespersons: For those of Caucasian Origins

On conducting the previously mentioned multivariate analysis of the different ethnicities with the spokespersons, the top 3 effective spokespersons for Caucasians that emerged are (descending order): firefighters/EMS officials (mean=7.87), survivors of disasters (mean=7.32) and representatives from the American Red Cross (mean=7.00).

The graph below sums up the results:



A correlation analysis was also conducted with the various spokespersons in order to better understand and arrive at statistically significant and generalizable insights into which of the spokespersons could be used in conjunction to arrive at optimal spokespersons that would be motivating for those of Caucasian origins.

	Children	Celebrities	Firefighters/ EMS	TV Newscasters	Elected officials	Local Govt.	Red Cross Officials	Community leaders	Survivors	Elderly	Disabled
Children	1	.446(**)	.248(**)	.282(**)	.269(**)	.198(**)	.309(**)	.383(**)	.448(**)	.568(**)	.614(**)
Celebrities	.446(**)	1	.213(**)	.443(**)	.455(**)	.334(**)	.334(**)	.410(**)	.350(**)	.400(**)	.445(**)
Firefighters/ EMS	.248(**)	.213(**)	1	.387(**)	.409(**)	.542(**)	.562(**)	.451(**)	.513(**)	.386(**)	.359(**)
TV Newscasters	.282(**)	.443(**)	.387(**)	1	.503(**)	.484(**)	.402(**)	.428(**)	.393(**)	.421(**)	.329(**)
Elected officials	.269(**)	.455(**)	.409(**)	.503(**)	1	.634(**)	.424(**)	.564(**)	.298(**)	.413(**)	.375(**)
Local Govt.	.198(**)	.334(**)	.542(**)	.484(**)	.634(**)	1	.517(**)	.490(**)	.359(**)	.324(**)	.343(**)
Red Cross Officials	.309(**)	.334(**)	.562(**)	.402(**)	.424(**)	.517(**)	1	.456(**)	.507(**)	.412(**)	.448(**)
Community leaders	.383(**)	.410(**)	.451(**)	.428(**)	.564(**)	.490(**)	.456(**)	1	.434(**)	.470(**)	.484(**)
Survivors	.448(**)	.350(**)	.513(**)	.393(**)	.298(**)	.359(**)	.507(**)	.434(**)	1	.514(**)	.556(**)
Elderly	.568(**)	.400(**)	.386(**)	.421(**)	.413(**)	.324(**)	.412(**)	.470(**)	.514(**)	1	.730(**)
Disabled	.614(**)	.445(**)	.359(**)	.329(**)	.375(**)	.343(**)	.448(**)	.484(**)	.556(**)	.730(**)	1

*Results are significant at $p=.05$

**Results are significant at $p=.01$

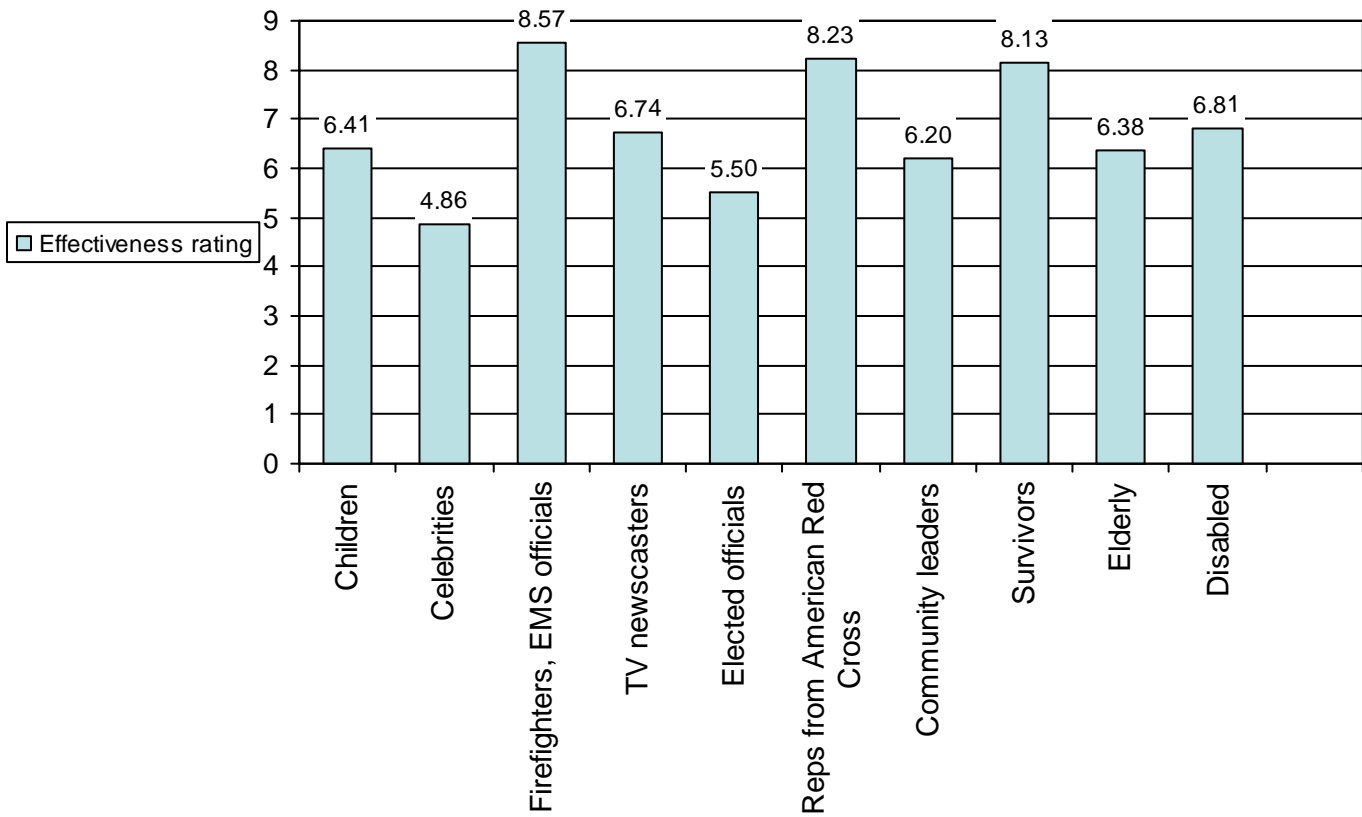
Several large correlations were noted in the case of spokespersons:

- Children are highly correlated with elderly ($r=.568$). This means that those who found children to be effective spokespersons would also find the elderly to be effective emergency preparedness spokespersons and vice-a-versa.
- Disabled are highly correlated with children ($r=.614$).
- Firefighters/EMS officials are highly correlated with local government officials ($r=.542$), representatives from American Red Cross ($r=.562$) and survivors of disasters ($r=.513$)
- TV newscasters are highly correlated with elected officials ($r=.503$)
- Elected officials are highly correlated with local government officials ($r=.634$) and community leaders ($r=.564$)
- Local government officials are highly correlated with American Red Cross officials ($r=.517$)
- American Red Cross officials are highly correlated with survivors of disasters ($r=.507$)
- Survivors of disasters are highly correlated with elderly ($r=.514$) and disabled ($r=.556$)
- Elderly are highly correlated with disabled ($r=.730$)
- Disabled are highly correlated with survivors of disasters ($r=.556$)

Preparedness Spokespersons: For those of Hispanic/Latino Origins

On conducting the previously mentioned multivariate analysis of the different ethnicities with the spokespersons, the top 3 effective spokespersons for those of Hispanic/Latino origins that emerged motivating are (descending order): firefighters/EMS officials (mean=8.57), representatives from the American Red Cross (mean=8.23) and survivors of disasters (mean=8.13).

The graph below sums up the results:



	Children	Celebrities	Firefighters/ EMS	TV Newscasters	Elected officials	Local Govt.	Red Cross Officials	Community leaders	Survivors	Elderly	Disabled
Children	1	.516(**)	.467(**)	.416(**)	.454(**)		.472(**)	.354(**)	.307(*)	.354(**)	.524(**)
Celebrities	.516(**)	1	.431(**)	.660(**)	.624(**)	.311(*)	.495(**)	.422(**)		.309(*)	.415(**)
Firefighters/ EMS	.467(**)	.431(**)	1	.456(**)	.382(**)	.465(**)	.513(**)	.502(**)	.576(**)		.388(**)
TV Newscasters	.416(**)	.660(**)	.456(**)	1	.518(**)	.484(**)	.584(**)	.417(**)	.281(*)	.308(*)	.385(**)
Elected officials	.454(**)	.624(**)	.382(**)	.518(**)	1	.487(**)	.525(**)	.481(**)	.305(*)		.343(*)
Local Govt.		.311(*)	.465(**)	.484(**)	.487(**)	1	.404(**)	.514(**)	.482(**)		
Red Cross Officials	.472(**)	.495(**)	.513(**)	.584(**)	.525(**)	.404(**)	1	.412(**)	.465(**)		
Community leaders	.354(**)	.422(**)	.502(**)	.417(**)	.481(**)	.514(**)	.412(**)	1	.554(**)	.382(**)	.379(**)
Survivors	.307(*)		.576(**)	.281(*)	.305(*)	.482(**)	.465(**)	.554(**)	1		.396(**)
Elderly	.354(**)	.309(*)		.308(*)				.382(**)		1	.761(**)
Disabled	.524(**)	.415(**)	.388(**)	.385(**)	.343(*)			.379(**)	.396(**)	.761(**)	1

*Results are significant at $p=.05$

**Results are significant at $p=.01$

On conducting a correlation analysis, several large correlations were noted in the case of spokespersons:

- Children are highly correlated with celebrities ($r=.516$) and disabled ($r=.524$)
- Celebrities are highly correlated with TV newscasters ($r=.660$)
- Firefighters/EMS officials are highly correlated with American Red Cross officials ($r=.513$) and survivors of disasters ($r=.576$)
- TV newscasters are highly correlated with elected officials ($r=.518$) and American Red Cross officials ($r=.584$)
- Elected officials are highly correlated with American Red Cross officials ($r=.525$)
- Local government officials are highly correlated with community leaders ($r=.514$)
- Community leaders (pastors, etc) are highly correlated with firefighters/EMS officials ($r=.502$) and survivors of disasters ($r=.554$)
- Elderly are highly correlated with disabled ($r=.761$)

Further analysis:

A discriminant analysis was conducted for those of Hispanic/Latino origin to assess how the motivational triggers and spokespersons would both together predict their motivation towards emergency preparedness.

The table below sums up the results in descending order. A negative discriminant score predicts an inverse or opposite relationship.

Thus, disabled as spokespersons and anniversary dates of previous disasters would predict maximum motivation for those of Hispanic/Latino origins. State and local officials would be least motivating for them.

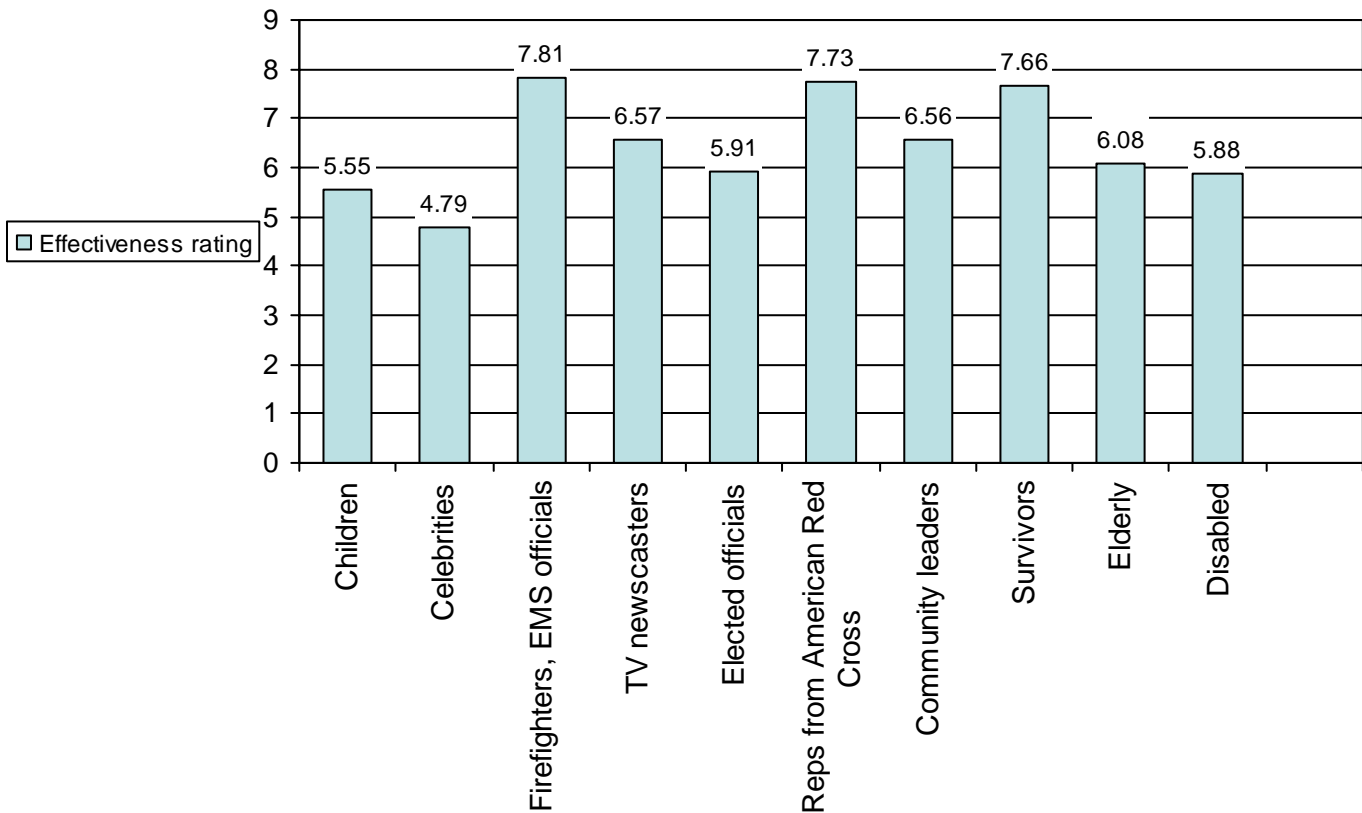
Motivational trigger predicting emergency preparedness	Discriminant coefficient
Disabled as spokespersons	0.65
Anniversary dates of previous disasters as motivators	0.50
Repeated advertisements/ messages about the need to be prepared as a motivator	0.45
Seasonal reminders as motivators	0.27
Responsibility towards family as a motivator	0.26
Security as a motivator	0.20
Help others as a motivator	0.20
Red Cross reps as spokespersons	0.12
Celebrities as spokespersons	0.10
Firefighters as spokespersons	0.08
TV newscasters as spokespersons	0.07
Children as spokespersons	0.07
Local govt. officials as spokespersons	0.02
Availability of convenient emergency kits in the market as motivators	-0.06
Personal experience as a motivator	-0.10
Survivors of disasters as spokespersons	-0.14
Promotional and public events as a motivator	-0.15
News about disasters as a motivator	-0.17
Frequent and repeated reminders from government agencies as motivators	-0.20
Self-sufficiency as a motivator	-0.22
Fear as a motivator	-0.23
Elderly as spokespersons	-0.24
Community leaders as spokespersons	-0.26
Prevent harm/loss of loved ones as a motivator	-0.26
Peace of mind as a motivator	-0.27
Pre-warning as a motivator	-0.28
State & Local elected officials as spokespersons	-0.33

Results are significant at $p=.000$; Eigenvalue=.117; correlation=.324; Wilks' Lambda=.895

Preparedness Spokespersons: For those of Asian Origins

On conducting the previously mentioned multivariate analysis of the different ethnicities with the spokespersons, the top 3 spokespersons for Asians that emerged are (descending order): firefighters/EMS officials (mean=7.81), representatives from the American Red Cross (mean=7.73) and survivors of disasters (mean=7.66).

The graph below sums up the results:



A correlation analysis was conducted with the various spokespersons in order to better understand and arrive at statistically significant and generalizable insights into which of the spokespersons could be used in conjunction to arrive at optimal spokespersons that would be motivating for Asians.

A chart with the correlations can be found on the following page.

	Children	Celebrities	Firefighters/ EMS	TV Newscasters	Elected officials	Local Govt.	Red Cross Officials	Community leaders	Survivors	Elderly	Disabled
Children	1	.335(**)	.249(**)	.303(**)	.279(**)	.217(*)	.267(**)	.376(**)	.425(**)	.681(**)	.758(**)
Celebrities	.335(**)	1	.515(**)	.551(**)	.466(**)	.307(**)	.444(**)	.360(**)	.485(**)	.459(**)	.471(**)
Firefighters/ EMS	.249(**)	.515(**)	1	.581(**)	.578(**)	.613(**)	.749(**)	.528(**)	.664(**)	.509(**)	.347(**)
TV Newscasters	.303(**)	.551(**)	.581(**)	1	.524(**)	.475(**)	.644(**)	.465(**)	.480(**)	.395(**)	.372(**)
Elected officials	.279(**)	.466(**)	.578(**)	.524(**)	1	.685(**)	.608(**)	.639(**)	.500(**)	.529(**)	.419(**)
Local Govt.	.217(*)	.307(**)	.613(**)	.475(**)	.685(**)	1	.623(**)	.619(**)	.452(**)	.482(**)	.316(**)
Red Cross Officials	.267(**)	.444(**)	.749(**)	.644(**)	.608(**)	.623(**)	1	.559(**)	.631(**)	.456(**)	.374(**)
Community leaders	.376(**)	.360(**)	.528(**)	.465(**)	.639(**)	.619(**)	.559(**)	1	.471(**)	.586(**)	.517(**)
Survivors	.425(**)	.485(**)	.664(**)	.480(**)	.500(**)	.452(**)	.631(**)	.471(**)	1	.664(**)	.611(**)
Elderly	.681(**)	.459(**)	.509(**)	.395(**)	.529(**)	.482(**)	.456(**)	.586(**)	.664(**)	1	.819(**)
Disabled	.758(**)	.471(**)	.347(**)	.372(**)	.419(**)	.316(**)	.374(**)	.517(**)	.611(**)	.819(**)	1

*Results are significant at $p=.05$

**Results are significant at $p=.01$

Several large correlations were noted in the case of spokespersons:

- Children are highly correlated with elderly ($r=.681$) and disabled ($r=.758$)
- Celebrities are highly correlated with firefighters/EMS officials ($r=.515$) and TV newscasters ($r=.551$)
- Firefighters/EMS officials are highly correlated with: TV newscasters ($r=.581$), elected officials ($r=.578$), local government officials ($r=.613$), American Red Cross Officials ($r=.749$), community leaders ($r=.528$), survivors of disasters ($r=.664$), elderly ($r=.509$)
- TV newscasters are highly correlated with elected officials ($r=.524$) and Red Cross representatives ($r=.644$)
- Elected officials are highly correlated with local government officials ($r=.685$), Red Cross representatives ($r=.608$), community leaders ($r=.639$), survivors of disasters ($r=.500$) and elderly ($r=.529$)
- Local government officials are highly correlated with Red Cross representatives ($r=.623$) and community leaders ($r=.619$)
- Red Cross representatives are highly correlated with community leaders ($r=.559$), and survivors of disasters ($r=.631$)
- Community leaders are highly correlated with elderly ($r=.586$) and disabled ($r=.517$)
- Survivors of disasters are highly correlated with elderly ($r=.664$) and disabled ($r=.611$)

Further analysis:

A discriminant analysis was conducted for those of Asian origin to assess how the motivational triggers and spokespersons would both together predict their motivation towards emergency preparedness.

The table on the following page sums up the results in descending order. A negative discriminant score predicts an inverse or opposite relationship.

It was found that the need for security and news about disasters would be most motivating to prepare for emergencies and firefighters/EMS officials as spokespersons would be the least motivating for those of Asian origins.

The table on the next page sums up the results.

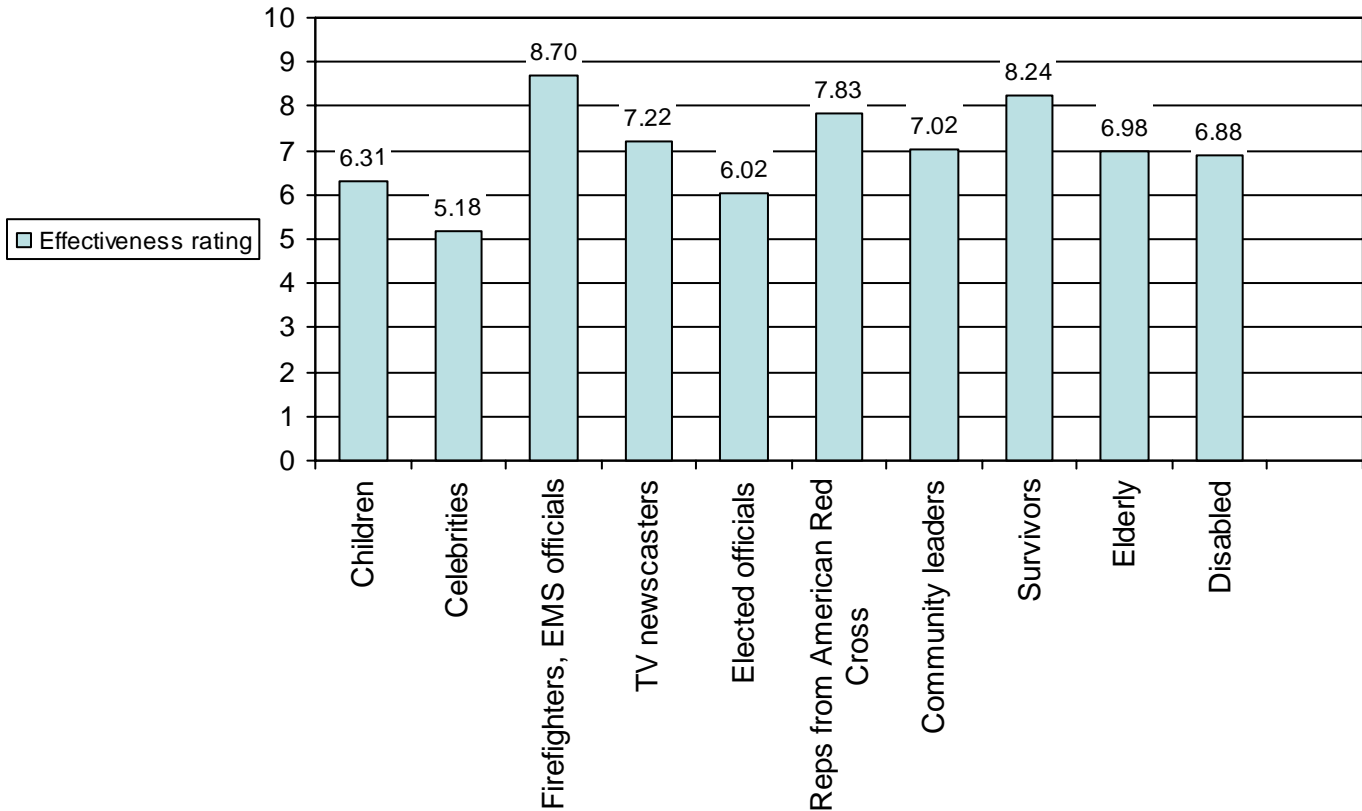
Motivational trigger predicting emergency preparedness	Discriminant coefficient
Security as a motivator	0.45
News about disasters as a motivator	0.45
Red Cross reps as spokespersons	0.37
Celebrities as spokespersons	0.33
Promotional and public events as a motivator	0.27
Responsibility towards family as a motivator	0.27
Seasonal reminders as motivators	0.25
Fear as a motivator	0.24
TV newscasters as spokespersons	0.23
Pre-warning as a motivator	0.18
Community leaders as spokespersons	0.11
Elderly as spokespersons	0.10
Frequent and repeated reminders from government agencies as motivators	0.07
Anniversary dates of previous disasters as motivators	0.04
State & Local elected officials as spokespersons	0.04
Prevent harm/loss of loved ones as a motivator	0.00
Help others as a motivator	-0.02
Personal experience as a motivator	-0.03
Disabled as spokespersons	-0.11
Local govt. officials as spokespersons	-0.13
Children as spokespersons	-0.13
Survivors of disasters as spokespersons	-0.19
Peace of mind as a motivator	-0.34
Availability of convenient emergency kits in the market as motivators	-0.41
Repeated advertisements/ messages about the need to be prepared as a motivator	-0.52
Self-sufficiency as a motivator	-0.58
Firefighters as spokespersons	-0.62

Results are significant at $p=.001$; Eigenvalue=.092; correlation=.291; Wilks' Lambda=.915

Preparedness Spokespersons: For African-Americans

On conducting the previously mentioned multivariate analysis of the different ethnicities with the spokespersons, the top 3 spokespersons for African-Americans that emerged are (descending order): firefighters/EMS officials (mean=8.7), survivors of disasters (mean=8.24) and representatives from the American Red Cross (mean=7.83).

The graph below sums up the results:



	Children	Celebrities	Firefighters/ EMS	TV Newscasters	Elected officials	Local Govt.	Red Cross Officials	Community leaders	Survivors	Elderly	Disabled
Children	1	.704(**)		.393(**)	.362(*)	.469(**)	.334(*)	.618(**)	.382(**)	.671(**)	.701(**)
Celebrities	.704(**)	1		.533(**)	.524(**)	.498(**)	.395(**)	.451(**)	.294(*)	.509(**)	.536(**)
Firefighters/ EMS			1	.413(**)	.348(*)	.378(**)	.421(**)	.404(**)		.385(**)	.458(**)
TV Newscasters	.393(**)	.533(**)	.413(**)	1	.430(**)	.370(**)	.310(*)	.439(**)		.509(**)	.564(**)
Elected officials	.362(*)	.524(**)	.348(*)	.430(**)	1	.654(**)	.466(**)	.580(**)		.343(*)	.375(*)
Local Govt.	.469(**)	.498(**)	.378(**)	.370(**)	.654(**)	1	.454(**)	.536(**)	.305(*)		.439(**)
Red Cross Officials	.334(*)	.395(**)	.421(**)	.310(*)	.466(**)	.454(**)	1	.479(**)	.368(**)	.329(*)	.381(**)
Community leaders	.618(**)	.451(**)	.404(**)	.439(**)	.580(**)	.536(**)	.479(**)	1	.290(*)	.429(**)	.511(**)
Survivors	.382(**)	.294(*)				.305(*)	.368(**)	.290(*)	1		.441(**)
Elderly	.671(**)	.509(**)	.385(**)	.509(**)	.343(*)		.329(*)	.429(**)		1	.686(**)
Disabled	.701(**)	.536(**)	.458(**)	.564(**)	.375(*)	.439(**)	.381(**)	.511(**)	.441(**)	.686(**)	1

*Results are significant at $p=.05$

**Results are significant at $p=.01$

Several large correlations were noted in the case of spokespersons:

- Children are highly correlated with celebrities ($r=.704$), community leaders ($r=.618$), elderly ($r=.671$) and disabled ($r=.701$)
- Celebrities are highly correlated with TV newscasters ($r=.533$), elected officials ($r=.524$), elderly ($r=.509$) and disabled ($r=.536$)
- TV newscasters are highly correlated with elderly ($r=.509$) and disabled ($r=.564$)
- Elected officials are highly correlated with local government officials ($r=.654$) and community leaders ($r=.580$)
- Local government officials are highly correlated with community leaders ($r=.536$)
- Community leaders are highly correlated with disabled ($r=.511$)
- Elderly are highly correlated with disabled ($r=.686$)

Emergency Kit Procurement & Networking

In an attempt to arrive at future strategies and methods of making emergency kits available to respondents, a series of questions of “likelihood” were asked. These questions were related to:

- Likelihood of buying them in the market
- The dollar amount respondents were willing to pay for it if they bought one for every member in their family
- The optimal venues where they would be willing to purchase an emergency kit
- Preferred venues to pro-actively network and prepare for disasters
- Other potential strategies to enable emergency kit distribution through realtors, grocery stores and promotions such as “buy a kit for someone”

The next few sections discuss the results in detail.

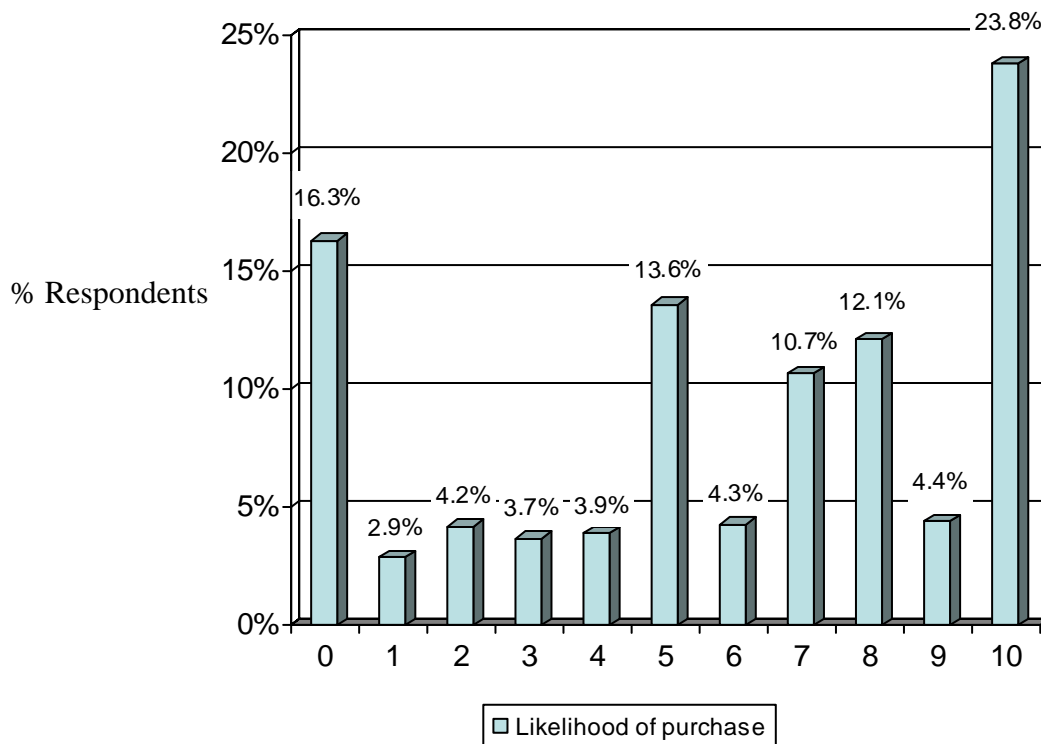
Likelihood of Buying an Emergency Kit with 3 days' Supply in the Market

Respondents were asked to rate on a scale from 0-10, their likelihood of buying a kit with supplies for 3 days if it were available in the market. A rating of 0 denoted “not likely at all” and a rating of 10 denoted “highly likely”.

The mean score for the likelihood of buying an emergency kit with 3 days worth of supplies was moderate at 5.81. However, about half the respondents (40.3%) demonstrated a high likelihood (8-10) of purchasing an emergency kit with 3 days worth of supplies in the market. Almost one-quarter respondents (23.8%) gave a rating of 10.

The overall moderate score can perhaps be explained by the fact that 17.4% of the respondents indicated that they already have one. Another 6.8% felt that people need to be prepared for more than 3 days for disasters/emergencies. This is no surprise, given that the overall mean rating of the respondents' expectation of the time it would take to restore services to their neighborhood after a disaster is 5.09 days. Thus, there could be several reasons for the moderate likelihood of purchasing an emergency kit. However, the most compelling reason for buying a readily available kit was convenience. This insight also emerged in the focus groups.

“If a pre-packaged emergency kit with supplies for 3 days were available in the market, on a scale from 0-10, where 10 is “highly likely” and 0 is “not likely at all”, how likely are you to buy one?”

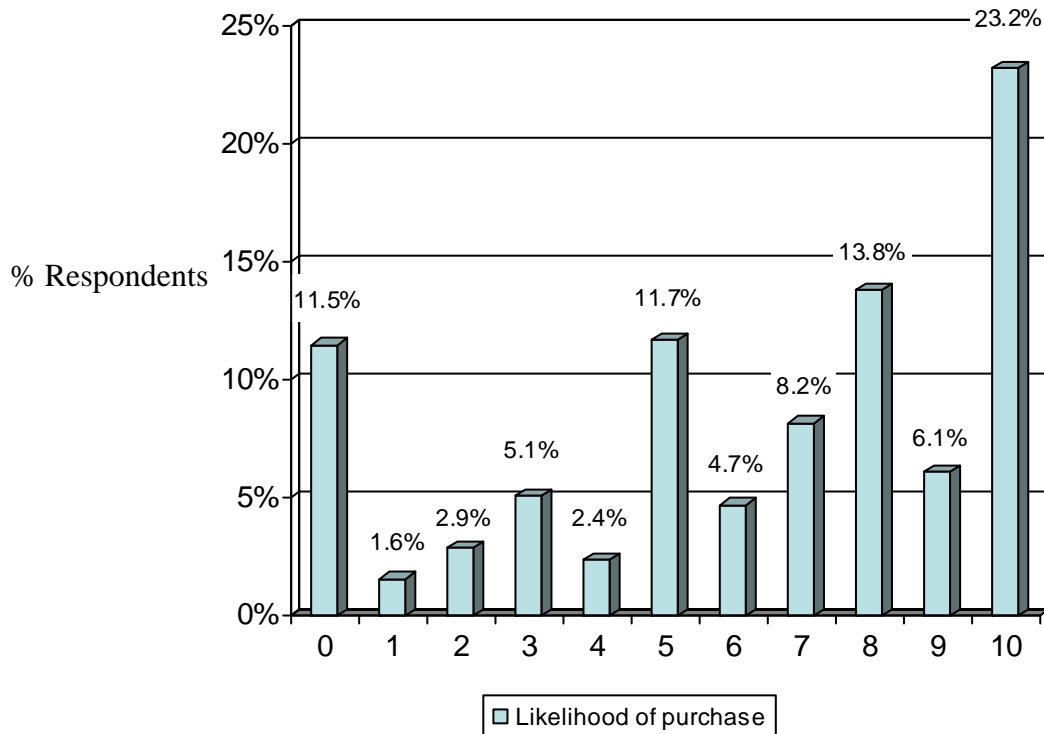


Price For an Emergency Kit For Every Family Member

The mean dollar amount the respondents were willing to pay for a kit if they were to buy one for every member of their family was \$40.44. Given that the mode was \$20, it can be said that most respondents were willing to pay \$20 for an emergency kit for every member of their family.

Further, respondents were also asked if at a public area in their neighborhood an emergency kit were being sold at their preferred price, how likely were they to buy it. The mean rating was moderately high at 6.71. More than half the respondents (51.9%) gave a high rating of a likelihood between 8-10.

“If a public area in your neighborhood such as a grocery store, a Church, etc. were to sell you an emergency kit which costs about the amount you mentioned, on a scale from 0-10, where 0 is “not likely at all” and 10 is “highly likely”, how likely are you to buy one?”



Optimal Venues to Purchase an Emergency Kit

In order to understand the preferred public areas/forums where respondents would be willing to buy an emergency kit, respondents were asked to indicate the top 3 areas. The table below sums up the results:

Venue	% Respondents
Grocery store	48.0%
Warehouse clubs like Costco/ SAMs	17.4%
Internet	7.5%
Church	7.2%
Hardware store	4.4%
School	3.8%
Library	3.7%
Other	2.7%
Drug store	1.7%
Banks/ Credit unions	1.0%
Café/ Coffee shops	0.3%
Auto dealers	0.1%
REFUSED/DON'T KNOW	2.2%
Total	100.0%

Thus, grocery stores followed by large warehouses and the Internet emerged as the top 3 venues where respondents would be likely to buy an emergency kit. The other top 2 responses for venues to buy a kit were community centers and the fire department/station.

Respondents were further asked why they thought the aforementioned places would be the most optimal places for them to buy an emergency kit. The following responses were stated:

Reason	% Respondents
Convenient place	31.6%
Often visit the place	30.1%
Other	23.3%
Spend maximum time there/ hang out	7.8%
Spend a lot of time chatting with people there	4.8%
REFUSED/DON'T KNOW	2.5%
Total	100.0%

The “other” responses were similar in nature to “convenient place” and “often visit the place”, where respondents emphasized the importance of “lots of people visiting”. Thus, given that grocery stores and warehouses were most convenient and often visited places, respondents would be most likely to buy an emergency kit at the aforementioned places.

Preferred Venues to Pro-actively Network and Prepare for Disasters

In order to gain better understanding of the respondents' "milling" habits, they were asked which of the following community areas according to them would be the best places for them to network and pro-actively prepare for disasters:

- Grocery store
- Church
- Café/ Coffee shop
- Library
- School
- Community organizations
- Work place

The following results were noted:

Community Areas	% Respondents
Church	15.6%
School	15.3%
Community organizations	13.9%
Work place	11.9%
Library	10.8%
Grocery store	9.5%
Café/ Coffee shop	2.5%
Other	3.9%
Refused/Don't Know	16.7%
Total	100.0%

Thus, while respondents may buy an emergency kit at a grocery store, they are more likely to pro-actively network and prepare for disasters at the Church and school. The "other" 2 most frequent responses were neighborhood organizations (watch groups/HOAs) and the fire station. Respondents were also asked why they would network at the aforementioned areas. The following results were noted:

Reason	% Respondents
Convenient place (location)	25.7%
Often visit the place	17.6%
Spend a lot of time chatting with people there	8.3%
Spend maximum time there	7.6%
Other	21.4%
Refused/Don't Know	19.4%
Total	100.0%

Thus, once again locational convenience and frequency of visit were the 2 most compelling reasons to network and pro-actively prepare for disasters at the Church and school. The "other" responses, were once again noted as being variations of location and frequency of visit.

Strategies Enabling Distribution of Emergency Kits

Three potential strategies of enabling the distribution of emergency kits were explored:

- As “welcome gifts” by realtors when a house is bought
- As a “compassion gift” for someone else
- Emergency preparedness through stores

These strategies emerged from the focus group findings. These were further analyzed for statistical representation among the respondents in this study.

The next few sections discuss the findings from the aforementioned strategies in detail.

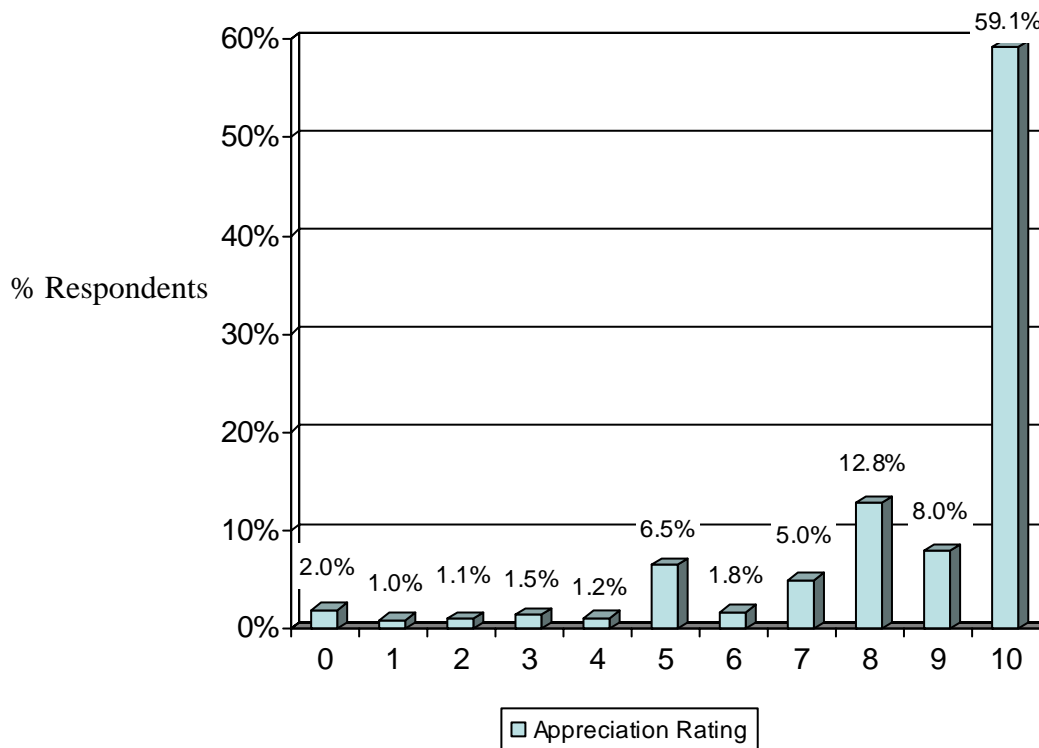
Kit Distribution Strategies: Emergency Kits as “Welcome Gifts” by Realtors

Respondents were asked to rate on a 0-10 scale, how appreciative they would feel if they were given an emergency kit as a gift by a realtor when they bought a house.

The overall mean rating was high at 8.57, with more than three-fourths (79.9%) of the respondents giving a high rating between 8 and 10. A high positive kurtosis score of 3.321 indicates that the responses were largely homogenous and consensual.

The graph below sums up the responses:

“If you bought a house and the realtor gave you an emergency kit as a gift, on a scale from 0-10, where 10 is “highly appreciative” and 0 is “not appreciative at all” how appreciative would you be of the gift?”



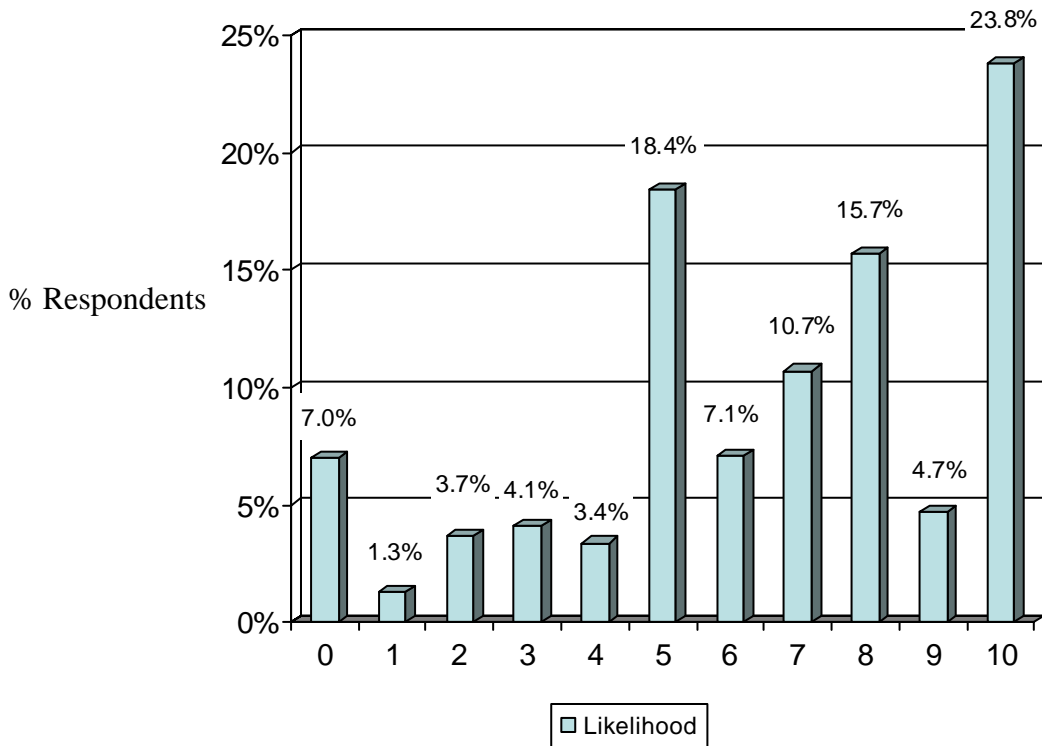
Kit Distribution Strategies: Emergency Kits as “Compassion Gifts” for Someone Else

Respondents were asked to rate on a scale from 0-10, their likelihood of buying an emergency kit for someone else who may not be able to afford an emergency kit.

The overall mean rating was moderately high at 6.51, where about half (44.2%) of the respondents gave a high rating between 8 and 10. Almost one-quarter of the respondents (23.8%) gave a rating of 10.

The graph below sums up the responses:

“Say, if there was a promotion, of “buy an emergency kit for a person who may not be able to afford one”, on a scale from 0-10, where 10 is “highly likely” and 0 is “not likely at all”, how likely are you to buy a kit for someone else?”

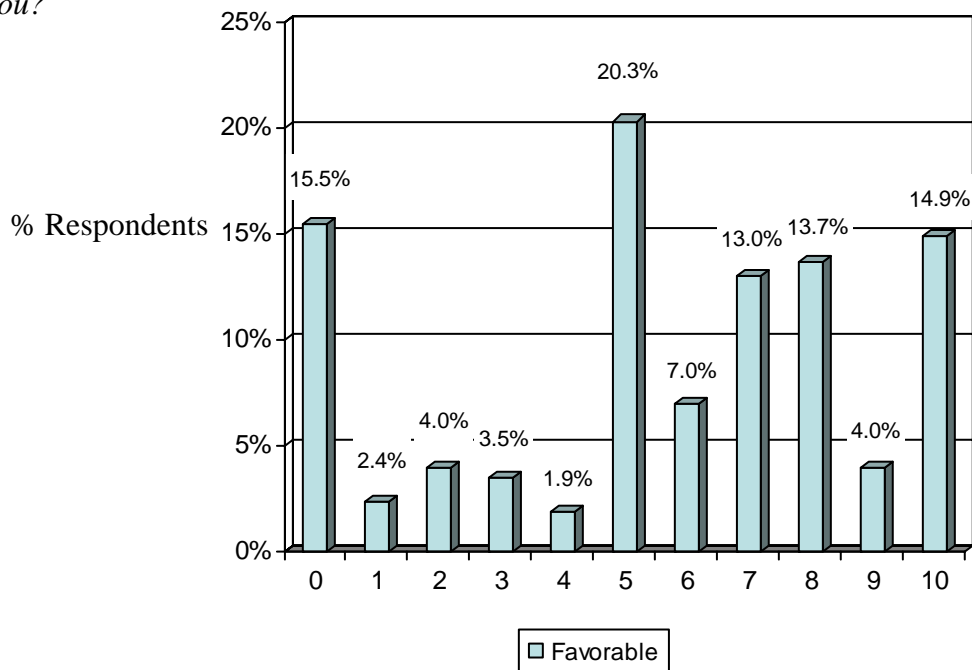


Kit Distribution Strategies: Emergency Preparedness Promotion Through Stores

It has already been established in the previous section that respondents have a high likelihood of purchasing an emergency kit at grocery stores and large warehouses.

In order to further assess whether emergency preparedness promotion through stores would be a good venue, respondents were asked to rate on a scale from 0-10, their perception of how it might change the perception of the store as more or less favorable in their minds. The overall mean rating was moderate at 5.56. More than a third of the respondents (32.5%), however, gave a rating between 8 and 10, which indicated that if a store were to promote emergency preparedness, there is a high likelihood that the store's perception would be better in the respondents' minds.

“If stores were to promote emergency preparedness, on a scale from 0 to 10, where 0 means “does not make them more favorable to me at all” and 10 means “makes them a lot more favorable to me”, how do you think the perception of the store might change for you?”



There were a variety of reasons as to why the perception of the stores would/would not change. Most responses were positive.

Some of the skepticism among the respondents was related to the fact that this should not be a for-profit venture for the store. It would thus, be critical to make it clear to the residents that it is a non-profit endeavor for the larger good of the society.

Some examples of the different responses were:

- *“It would make people more aware (about the issue of emergency preparedness).”*
- *“I assume that the store won’t make money.”*
- *“It would be convenient.”*
- *“It would show (that the store) is helping to serve the community/investing in the community.”*
- *“I’d go to the store anyway. Makes no difference to me.”*
- *“Because they’re (the store) still making money. I wouldn’t look at it as a service.”*

Focus Group Key Findings

Emergency preparedness gap:

It was found that most participants were aware of the importance of being self-sufficient and self-reliant during an emergency, and they agreed that they did not want to be solely dependent on government officials/organizations for help. However, it was also noted that none of the participants had any emergency plan in place for when they were commuting on the road or at any other public place such as a café, Church or library.

The disaster most feared by the participants was an earthquake followed by a windstorm. What participants said they feared the most during an emergency was the disruption of communication systems and infrastructure. The fear and uncertainty of not being able to contact or correspond with family members concerned them most.

While most participants had some semblance of what could qualify as an emergency kit, none really had a “plan” to communicate with their family during a disaster. Even though, most agreed that a plan to communicate with family members and meeting them at a spot was of primary importance to them.

Defining an emergency:

The fact that a lot of participants felt that they were almost always “safe” and therefore, did not see any reason to really “meticulously” prepare for a disaster could be attributed to their ambiguous perceptions of what a disaster really comprised. As noticed, the very definition of what qualified as a “disaster” or an “emergency” for the 6 groups varied according to culture, geographical location and socio-economic differences. Perhaps by defining what kind of disaster or emergency and its scale people could be faced with, would motivate people to have a more detailed plan and be better prepared for it, as they would know what to prepare for as opposed to being “generally prepared”. This insight was seen often with participants saying that their levels of preparation is dependent on the kind of and scale of disaster they are faced with.

Preparedness & Reliance on neighbors:

Participants who had close ties and involvement with institutions such as their Church or school for instance, were more aware and also more favorably inclined to be better prepared for disasters and emergencies. This was because their institutional affiliations provided them the knowledge and awareness that helped them to be better prepared. Another organization that emerged as providing emergency preparedness awareness was the Home owners’ Association (HOA). An example of some of the educational outreach activities conducted by the HOA was inviting an official from King County to provide emergency training to the members, mapping their neighborhood and assigning different responsibilities and skills to different members.

Though most participants may not have day to day close contact with their neighbors, they felt confident that they could approach their neighbors for help in case of an emergency, and they in turn, would be willing to do so for their neighbors in turn. However, where pro-actively assigning responsibilities and assuming responsibilities were concerned, in order to be better prepared for a disaster, most participants were doubtful of it being successful due to the lack of motivation to organize their community members.

Participants were also concerned that should a disaster plan be implemented in their neighborhoods, a plan for the aged and disabled should also be included. Some participants also talked about the need to overcome the language barrier in order to include members of their community who did not speak English. Therefore, there seemed to be a need to address the specific needs of these a fore mentioned special groups when devising an emergency/disaster plan for a neighborhood.

Credible sources in case of an emergency:

Most participants agreed that their local radio stations were the most reliable sources of information in case of a disaster. Participants also felt that they would go to a fire station as well as trust an official working at a fire station for information and assistance in case of a disaster. It was interesting to note that different information “messengers” appealed to different people depending on their ethnicity. For the Latin/Hispanic group and for members of the LDS Church, for instance, it was their Church; for the Chinese group it was the PTA and schools; for most participants it was officials at the fire station.

Motivational triggers and strategy:

Where the motivational triggers for kit adoption and emergency preparedness were concerned, 4 insights emerged, that related to: convenience, repeated messages, compassion/sharing, and realistic fact/statistics based advertising messages.

Participants unanimously agreed that there is a need to spread awareness about the need to be prepared during a disaster. They suggested repeated and regular reminders tying in with major seasonal dates (like daylight savings) and commemorative dates (like anniversary of the December 2006 windstorm) in order to drive the point of emergency preparedness. Most participants were also aware of the 3 days 3 ways campaign and agreed that 3days3ways.org was a good reminder of the message.

While the cost of a kit emerged to be a primary concern for the participants, the convenience of having a readymade kit available was another important consideration for the participants for adopting/assembling an emergency kit. The most conspicuous space and location to promote the buying of a kit and spreading awareness about disaster preparedness, according to the participants would be their local grocery stores.

Further, participants also said this kind of effort would make them feel positively about the store and they would not see it as a for-profit effort. Illustrating the act of compassion/sharing that would motivate them to adopt a kit, participants also said that they were likely to buy a kit for someone who may not be able to afford it, for a family member as a gift and/or for a neighbor.

It can be concluded that the primary underlying motivational trigger for the participants to be better prepared for an emergency was attributed to their awareness of, or creating the awareness by communicating that a disaster could occur and could have serious consequences to their immediate family members and larger community such as their neighborhood. However, with the caveat, that participants want to hear reminders and messages about “real” disasters like a windstorm, and not “out there” disasters like a terrorist attack. Further, they want these disaster scenarios to be substantiated with empirical facts and figures and “real” images and sound tracks, which would support and further bolster their reason and need to be prepared in the future for disasters that are foreseeable and perhaps imminent.

Key Person Interviews: Preparedness of Corporate Offices and Public Institutions

In order to investigate the preparedness of some special entities such as institutes of higher education, hospitals and other corporations that are in a critical position once emergencies arise, a series of key person interviews were conducted among security representatives of these entities.

The purpose of these interviews was to: (a) understand the steps taken towards emergency preparedness; (b) assess the “gaps” that exist in emergency preparedness; and (c) how the Office of Emergency Management can meaningfully address the identified “gaps”.

Interviews with security personnel and staff were conducted among the following 12 corporations and institutions: 3 institutes of higher education; 1 large real estate and mall development company with high rise multi-use buildings in downtown Bellevue; 1 large Seattle sports stadium; 2 large Bellevue-based hospitals; 1 large 24-hour grocery chain store; 1 large northwest Internet and communications company; 1 large national retail store chain; and 1 mid-sized regional motel chain.

These corporations and institutes were selected as there are a large number of people present at their premises at any given time of the day. It would therefore, be critical and insightful to understand the emergency provisions undertaken by them in order to assess their levels of preparedness, and understand where the caveats exist that can be filled by public education efforts. The designations of the respondents were as follows:

- Director of Emergency Management
- Security Program Assistant
- VP Safety Security
- Business Continuity Officer
- General Manager
- Director of Security
- Manager of Safety, Security and Emergency Management
- Supervisor of Administrative Services
- Loss Prevention Director
- Store Manager
- Director of Operations
- Security/Communications Manager

Emergency preparedness in general:

In general, it was felt that a disaster plan was important. It provided a clear course of action in case of an emergency.

- *“It takes the confusion out of the action to whatever is going on. You can act quicker with a plan than without one.”*

There was consensus in general, regarding the fact that the companies and entities themselves should be responsible for disaster and emergency preparedness. Respondents also agreed that they should not be dependent upon government and other first response agencies.

- *“(I) Think we have the primary responsibility (to prepare their facilities for disasters).”*
- *“We have the primary responsibility for property and tenants.”*

When asked about the provisions respondents’ facilities had in case of an emergency, a generator was most frequently stated. Three of the respondents said that their companies had no emergency provisions. This was due to lack of adequate budget and space. Two respondents said they were prepared with food and medicines, and 1 respondent said his company had a 72-hour emergency kit for all employees.

Nine of the 12 representatives interviewed said their corporations were required to comply by emergency requirements enforced by law. Some of the laws that were specifically mentioned were:

- Washington Administrative Code (WAC) Section 296-24-567 (Employee emergency plans and fire prevention plans)
- National Credit Union Administration (NCUA) Part 748
- Occupational Safety and Health Administration (OSHA)
- National Incidents Management System (NIMS)

All of the respondents said they currently had some kind of an emergency/disaster plan for their respective facilities, which they felt was generally sufficient and “good”. They also described their plan as “all encompassing”, where they felt they were prepared for a wide range of natural and man made disasters/emergencies.

- *“It is an all-hazard plan for 3 levels of emergency. Localized like fire, anything that would displace them from their offices, and a large disaster in the region like an earthquake.”*

The disasters and emergencies they felt most prepared for were earthquakes, fires, floods, bomb blasts, gas leaks, computer failure and adverse weather conditions.

However, the next subsequent sections elaborate upon the various need gaps and shortcomings that were noted in their emergency plans.

Emergency plans in general:

All the respondents except 1 said that their facilities had an assigned team to execute an emergency plan. However, the emergency plans in general were communication plans through paging systems, email, phone and the Internet and evacuation plans.

- *“Use radio system, telephone based paging system or panic buttons which is basically a speed dial to the security office . . . Also have emergency phone system . . .”*

It would be worth noting, that given that during an emergency, technology can often fail, a communication plan based on email and phone may not be an optimal strategy. A need was felt for public education campaigns to spread awareness about implementing comprehensive and workable communication plans during an emergency that go beyond the reliance on technology, especially at busy areas such as a sports stadium and shopping malls.

All, but 1 corporation conducted drills and exercises with their staff. Training and drills included activities such as CPR, evacuation drills, annual drills with the fire department and “stimulated drills” where an earthquake scenario is “created” and staff training is provided. Nonetheless, there was a general feeling that more training and drills were required.

Respondents were also asked if they had an emergency evacuation process. Only 8 of the 12 interviewed had one. Once again, the evacuation procedures lacked meticulous planning and execution such as having a designated meeting place and so forth. All plans relied on communicating through technology: phones and email, for instance.

Respondents were also asked how many times a year the evacuation process was revised. Only 1 respondent said it was revised on a weekly basis. Half (6) the respondents said it was revised yearly.

Emergency preparedness plans for “special” groups:

Questions were also asked regarding emergency provisions and plans for special groups such as children and handicapped. Half (6) the respondents stated having no provisions/plans for special groups.

The most commonly stated groups for whom there were emergency provisions were for handicapped people and children, followed by the elderly. Minimal emergency preparedness steps were undertaken for these groups such as notifying the security personnel where they are and availability of assistance tools such as wheelchairs.

Also, there weren’t any emergency plans for the hearing and visually impaired. There is thus, considerable lack of emergency preparedness for special groups in public areas and facilities in general. There was also no plan to communicate with non-English speaking groups during an emergency.

Lack of resources:

On asking what are the reasons that impede better emergency preparedness practices and procedures, in general, budget constraints was a commonly stated factor that restricted opportunities of greater training and emergency preparedness.

- *“Budget constraints are a big issue. No lack of manpower or motivation.”*

This potentially creates an opportunity to implement and spread awareness about innovative emergency programs that are simple and do not require large monetary investments, such as using sirens, bells and whistles during an emergency to communicate with employees and other people.

Expectations for the OEM and other similar agencies:

Five respondents were sure of what the OEM did. The rest were unsure or ambiguous of the OEM’s functions. A wide range of responses regarding what the King County Office of Emergency Management does were noted. Some examples are as follows:

- *“Not sure what they specifically do.”*
- *“I think they plan for initial response and recovery efforts.”*
- *“Keep the county prepared and interact with the Feds.”*
- *“I think they have helped smaller agencies to develop plans that will fit and work their organization.”*
- *“Informs and communicates emergency procedures.”*
- *“They hold table talks, conduct meetings and hold round table meetings.”*
- *“They provide information on what to do in various types of emergencies.”*
- *“More or less direct the emergency response for the region.”*

Except for 3, none had utilized any of OEM’s services and half (6) the respondents had had contact with the OEM through seminars or information updates.

It was also felt, in general, that the OEM and other similar agencies could help them review their emergency plans and provide guidance and advice through more communication such as seminars and newsletters, for instance.

There was almost a 50/50 divide of those who received communication/updates from emergency management agencies/first respondent agencies and those who had not. Those who had been in contact with the OEM felt it was useful and that OEM was very “supportive” of their efforts.

It was also felt that OEM/agency sponsored drills and trainings would be very helpful in fine-tuning and compiling a workable emergency plan.

- *“Advice on pertinent information regarding disasters and how to respond.”*
- *Just having a regular communications tool . . . quarterly would be fine . . . advising us of things we can expect.”*

Conclusion:

Given that there is minimal or lack of a comprehensive emergency plan for special groups such as the disabled, children, elderly and non-English speaking groups outside of their home environments, 3 public awareness and educational opportunities emerge:

(a) It is important to emphasize among citizens, in general, the need to be self-sufficient and prepared for emergencies even outside of the home. That is, citizens should not rely on their work place or a public area such as a mall or hospital to take care of them in case of an emergency. As noted in the interviews, there is no emergency plan that is “all-encompassing” that can cater to every situation and to every person’s specific needs.

(b) There is vast scope for conducting periodic seminars and training sessions, given that almost all the representatives interviewed felt that “enough training is never enough”.

(c) It is critical to implement programs at a corporate/institutional level and create awareness among employees about:

1. Emergency preparedness for special groups

2. Periodic and frequent communication and updates from the OEM and/or similar agencies and organizations to create awareness at all levels of an organization.

- *“Information and communication.”*
- *“It would be great for them to sponsor an executive seminar on emergency preparedness.”*
- *“Awareness and buy-in at the top of the organization. A lot of people have their head in the sand like it won’t happen. Another way of putting it is executive sponsorship.”*

3. There is particularly a need to create and implement emergency programs and communications plans beyond the reliance upon technology. This is critical, given that during a windstorm or earthquake or any other disaster, there is no guarantee that phone lines and cell phones, for instance, would work.

Conclusion

(I) Emergency preparedness in general:

- 1) Respondents felt most prepared for emergencies at home, followed by work, commuting and at places of entertainment, in that order.
- 2) Those who owned their homes were more prepared for emergencies at home than those who rented.
- 3) Preparedness at home also predicted preparedness while commuting. That is, respondents who were more prepared for emergencies at home were also more prepared while commuting.
- 4) The biggest motivation to be prepared for emergencies at home is the need to be self-sufficient/ self-reliant in case of an emergency. Also, firefighters, police, or EMS officials as spokespersons of emergency preparedness were highly motivating spokespersons.
- 5) It was also found that the more the respondents were involved with neighborhood organizations, the more prepared for a disaster they felt at home, at work, at places of entertainment and while commuting.
- 6) Overall mean rating of the respondents' expectation of the time it would take to restore services to their neighborhood after a disaster is 5.09 days.
- 7) Overall mean rating of the number of days respondents were prepared to be on their own without services after a disaster/emergency was 6.17 days.

(II) Preparedness motivators and spokespersons:

- 8) The top 3 motivational triggers for those of Caucasian origins and African-Americans that emerged were (descending order): pre-warning about a disaster, responsibility towards family and loved ones and being in a position to help others.
- 9) The top 3 motivational triggers for those of Hispanic/Latino origins that emerged were (descending order): responsibility towards family and loved ones, being pre-warned about a disaster and being in a position to help others.
- 10) The top 3 motivational triggers for those of Asian origins were (descending order): pre-warning, responsibility towards family and loved ones and having a sense of security in case of a disaster.

- 11) The top 3 motivating spokespersons promoting emergency preparedness that emerged in general across the 4 ethnic groups were: firefighters/EMS officials, survivors of disasters and representatives from the American Red Cross.

(III) Awareness about 3 days 3 ways:

- 12) In all, 39.1% demonstrated aided awareness about the campaign. An additional 17.3% recalled hearing the campaign when they were told about it.

(IV) Likelihood of purchasing an emergency kit for 3 days worth of supplies:

- 13) About half the respondents demonstrated a high likelihood (8-10) of purchasing an emergency kit with 3 days worth of supplies in the market. Almost one-quarter respondents gave a rating of 10, or demonstrated a 100% likelihood of purchasing an emergency kit with 3 days worth of supplies.

(V) Likely price of an emergency kit for every family member:

- 14) The mean dollar amount the respondents were willing to pay for a kit if they were to buy one for every member of their family was \$40.44. Most respondents were however, willing to pay \$20 for an emergency kit for every member of their family, which denotes, that \$20 would be the optimal price.

(VI) Kit distribution strategies:

- 15) Grocery stores followed by large warehouses and the Internet emerged as the top 3 venues where respondents would be likely to buy an emergency kit. Other top 2 responses for venues to buy a kit were community centers and the fire department/station.
- 16) It is however, important to communicate that the emergency preparedness promotion at grocery stores is a not-for-profit venture, but is to serve a larger community need. This would eliminate/reduce the possible reason of “skepticism” that could arise among King County residents.
- 17) The Church and school emerged as the top 2 places for respondents to pro-actively network and prepare for disasters.
- 18) The top 4 reasons for grocery stores and the Church/school were: locational convenience, frequently visited places, a place where people spend a lot of time chatting and spend a lot of time.
- 19) More than three-fourths of the respondents demonstrated that if a realtor gave them an emergency kit as a welcome gift when they bought a house, they would be highly appreciative (8-10).

20) About half the respondents demonstrated a high likelihood (8-10) of purchasing an emergency kit for someone who could not afford it. Almost one-quarter of the respondents gave a rating of 10.

(VII) Emergency preparedness at a corporate level:

21) Representatives of all the corporations felt it important to have an emergency preparedness plan as it provides a clear course of action. They also agreed that they should not be dependent upon government and other first response agencies in case of emergencies and should be self-dependent.

22) Most emergency plans relied on communicating through technology. Public education outreach efforts should create awareness and implement programs about relying on non-technology alternatives during emergencies.

23) None of the emergency plans had any provision/plan for the hearing/visually impaired and non-English speaking groups. There is need to address the needs of these special groups.

24) In general, representatives of corporate entities suffered budget constraints with respect to implementing comprehensive emergency plans. There may be merit in creating awareness about emergency plans that do not require huge monetary investments (like using whistles and sirens, for instance).

25) Respondents found that frequent assistance from the OEM would be extremely helpful in: (a) creating comprehensive emergency plans; and (b) in staying abreast with the latest updates

Appendix 1: King County OEM Emergency Preparedness Survey

Hello, my name is _____, and I am calling from Hebert Research, a research firm in Bellevue. We are conducting a study about emergency preparedness. In this research we will be asking for your views on issues related to disasters or emergencies that could affect residents of King County. This call is for research purposes only and does not involve sales of any kind.

Would you be interested in answering a few questions that would help the government in managing emergency preparation? **[IF “NO” Thank and terminate; If not convenient arrange to call back]**

C1: For classification purposes and to ensure that we are reaching out to a representative sample of respondents, may I ask what ethnic group you would identify yourself with?

1. White/Caucasian
2. Hispanic or Latino
3. Asian
5. African American
6. Other **[SPECIFY]**
7. Refused **[THANK YOU & TERMINATE]**

1. On average, how many hours a-week do you typically spend at home? **[RECORD #]**
2. On average, how many hours a-week do you typically spend at work? **[RECORD #]**
3. Do you work from home?
 1. Yes
 2. No
4. How many hours a week do you spend commuting? **[RECORD #]**
5. How many hours a week, on average do you spend outside the house on entertainment activities like shopping, movies, etc? **[RECORD #]**
6. On a scale from 0-10, where 10 is “having food, medical supplies, water and clothes, for at least 3-5 days; having extra batteries and a flashlight” and 0 is “having none of these things”, how equipped/prepared do you think you might be for a disaster/emergency (such as an earthquake or windstorm) at each of these places? **[READ]**
 - a. At home **[RECORD #]**

- b. **[IF Q3=1; SKIP]** At work/ school/university (as the case may be) **[RECORD #]**
- c. Commuting **[RECORD #]**
- d. Places of entertainment (e.g. mall, movies, etc.) **[RECORD #]**

7. For how many days are you prepared to be on your own without services such as water, sewer, electricity, grocery stores, pharmacies & gas stations in case of a disaster or an emergency (E.g. an earthquake or a windstorm)? **[RECORD #]**.

8. On a scale from 0-10, where 10 is “very highly involved” and 0 is “not involved at all”, how involved would you say you are with the following community organizations? **[READ ONE AT A TIME; RECORD # AFTER EACH]**

- 1. Your neighborhood community [E.g. community center, etc.]/ Neighborhood organizations like member of the home owners’ association, neighborhood watch group, etc.
- 2. Your Church
- 3. Any Cultural/ethnic group
- 4. Professional organization like the Rotary club, school, etc.

9. Let’s talk about your motivation towards emergency preparedness. I will read a set of statements, and on a scale from 0-10, where 10 is “highly motivating” and 0 is “not at all motivating”, indicate which of the following statements would be most motivating for you to be prepared for a disaster? **[RECORD # AFTER EACH]**

- a. Fear (E.g. of loss of your life/ loss of loved one, etc.)
- b. The need to have peace of mind in case of a disaster
- c. The need for security in case of a disaster
- d. The need to be self sufficient/ self reliant
- e. The need to be in a position to help others
- f. Having gone through a personal experience of suffering a disaster
- g. Responsibility towards family and loved ones
- h. Prevent harm or loss of a loved one
- i. If you knew that something was going to happen/ per-warned about a disaster
- j. News about disasters (E.g. Katrina; latest collapse of a Minneapolis interstate bridge)
- k. Repeated advertisements/ messages about the need to be prepared
- l. Promotional and public events like fairs
- m. The availability of convenient emergency kits in the market to be better prepared
- n. Anniversary dates of previous disasters (E.g. inaugural day of the December 2006 windstorm; 2001 earthquake)
- o. Frequent and repeated reminders from government agencies
- p. Seasonal reminders (E.g. reminder of the windstorm in the Fall)

10. How many times do you think you would need to hear a reminder message about the need to be prepared for a disaster, before you actually do something to be prepared for it? **[RECORD #]**

11. Following a disaster such as an earthquake or severe weather conditions, what is your expectation of how many days it should take for services such as water, sewer, electricity, etc. to be restored in your neighborhood? **[RECORD #]**

12. Are you aware of the “3 days 3 ways campaign”?

1. Yes

2. No

3. Refused/Don’t Know

[CONCEPT STATEMENT: Let me tell you a little bit about **3 Days 3 Ways** in any case. **3 Days 3 Ways** is an Office of Emergency Management public education campaign that seeks to spread awareness about the need to be ready to survive on your own for a minimum of 3 Days following a disaster. The 3 Ways or steps to prepare for an emergency/disaster are: make a plan, build an emergency kit, and get involved, **both at** the family/individual level and with the community]

13. **[IF Q12=2 AND/OR 3, ASK]** Do you recall or hearing this campaign before?

1. Yes

2. No **[SKIP TO Q15]**

3. Refused/ Don’t Know [SKIP TO Q15]

14. **[IF Q13=1; ASK]:**

14a. Where did you learn about it? **[DON’T READ; CHECK ALL THAT APPLY]**

1. Radio

2. TV

3. Internet

4. Word of mouth – friends, acquaintances, family members, etc.

5. Magazines

6. Safety fairs

7. Community presentations (at **work place or another organization**, etc.)

8. Other **[SPECIFY]**

14b. On a scale from 0-10, where 10 is “highly motivating” and 0 is “not motivating at all” and 5 is “somewhat motivating”, how motivating do you think the campaign is? **[RECORD #]**

14c. On a scale from 0-10, where 10 is “highly achievable/doable” and 0 is “not achievable/doable at all” and 5 is “somewhat achievable/doable”, how doable do you think preparing a kit for 3 days is for you? **[RECORD #]**

14d. Why would you give it that rating? **[VERBATIM]**

15. According to you, how many days worth of supplies do you think an emergency kit should have? **[RECORD #]**

16. If a pre-packaged emergency kit with supplies for 3 days were available in the market, on a scale from 0-10, where 10 is “highly likely” and 0 is “not likely at all”, how likely are you to buy one? **[RECORD #]**

17. Could you please tell me why you would give it that rating? **[PRECODES; DON'T READ; SELECT ALL THAT APPLY]**

1. Too expensive
2. Already have one
3. Don't need one
4. Preparing for 3 days is too much work/ time consuming
5. One should be prepared for more that 3 days/ 3 days is too little
6. Not motivated enough
7. Other **[SPECIFY]**

18. If you were to buy an emergency kit for at least 3 days for every member of your family, how much are you likely to pay for each one? **[RECORD RESPONSE]**

19. If a public area in your neighborhood such as a grocery store, a Church, etc. were to sell you an emergency kit which costs about the amount you mentioned, on a scale from 0-10, where 0 is “not likely at all” and 10 is “highly likely”, how likely are you to buy one? **[RECORD #]**

20. I am now going to read out a list of some community areas/ forums as potential areas where an emergency kit could be bought. Do indicate the top 3 places that you think would be the best places for you to buy an emergency kit **[READ OPTIONS; SELECT UPTO 3; CHECK ALL THAT APPLY IN THE ORDER OF RESPONSE]**

- (a) Internet
- (b) Grocery store
- (c) Church
- (d) Café/ Coffee shops
- (e) Library
- (f) School
- (g) Hardware store
- (h) Drug store
- (i) Warehouse clubs like Costco/ SAMs
- (j) Auto dealers
- (k) Auto spare parts place
- (l) Banks/ Credit unions
- (m) Other **[SPECIFY]**

21. Why do you think these would be the best places? **[DON'T READ; ACCEPT UPTO 3]**

1. Spend maximum time there/ hang out
2. Spend a lot of time chatting with people there

3. Often visit the place
4. Convenient place
5. Other [**SPECIFY**]

22. Which of the following community areas do you think would be the best places for you to network to pro-actively prepare for a disaster? [**READ OPTIONS; SELECT UPTO 3**]

- (a) Grocery store
- (b) Church
- (c) Café/ Coffee shop
- (d) Library
- (e) School
- (f) Community organizations
- (g) Work place
- (h) Other [**SPECIFY**]

23. Why do you think this would be the best place? [**DON'T READ; ACCEPT UPTO 3**]

1. Spend maximum time there
2. Spend a lot of time chatting with people there
3. Often visit the place
4. Convenient place (location)
5. Other [**SPECIFY**]

24. If you bought a house and the realtor gave you an emergency kit as a gift, on a scale from 0-10, where 10 is “highly appreciative” and 0 is “not appreciative at all” how appreciative would you be of the gift? [**RECORD #**]

25. Say, if there was a promotion, of “buy an emergency kit for a person who may not be able to afford one”, on a scale form 0-10, where 10 is “highly likely” and 0 is “not likely at all”, how likely are you to buy a kit for someone else? [**RECORD #**]

26. If stores were to promote emergency preparedness, on a scale from 0 to 10, where 0 means “does not make them more favorable to me at all” and 10 means “makes them a lot more favorable to me”, how do you think the perception of the store might change for you?

27. Why would you give it this rating? [**VERBATIM**]

28. From time to time you may have seen or heard public service announcements on TV or radio telling you where to look for information, or giving actual tips on how to prepare for emergencies. I'm going to read you a list of different kinds of people who might be communicating this kind of emergency preparedness information on TV or radio. After I read each one, tell me how effective you think this kind of person would be as a persuasive communicator to motivate you to be better prepared for a disaster. Use a scale of 0 to 10 where 0 means “Not effective at all” and 10 means “Extremely effective”. [**REPEAT SCALE IF NECESSARY**] [**ROTATE 1 – 10.**]

- a. Children

- b. Celebrities, such as actors or sports figures
- c. Officials such firefighters, police, or Emergency Medical Services, also known as EMS
- d. TV newscasters
- e. Elected officials (state & local)
- f. Officials from local government, such as county Office of Emergency Management
- g. Representatives from the American Red Cross
- h. Community leaders (Church pastors, etc.)
- i. Survivors of disasters
- j. Elderly
- k. Disabled

I just have a few more questions for classification purposes.

29. What is your age? [RECORD #]
30. What is your marital status? **[DON'T READ; SELECT 1]**
- 1. Single or include divorced/widowed
 - 2. Married or include committed relationship
 - 3. Refused
31. Do you own your home or are you renting? **[DON'T READ; SELECT 1]**
- 1. Own
 - 2. Rent
 - 3. Don't know/ refused
 - 4. Other **[SPECIFY]**
- 31a. Do you have any children living in your household?
- 1. Yes **[IF YES, ASK HOW MANY & RECORD #]**
 - 2. No
 - 3. Refused
32. Do you have any pets in your house?
- 1. Yes
 - 2. No
33. What is the zip code of the city or community where you work?
34. Gender **[POSTCODE FROM VOICE]**

Thank you very much for taking the time to speak with us. Your input has been very valuable.