EFFECTS OF CRISIS LEADERSHIP IN PUBLIC SECTORS ON SATISFACTION WITH POST-DISASTER RECOVERY

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Effects of Crisis Leadership in Public Sectors on Satisfaction with Post-Disaster Recovery

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Abstract

Crises normally occur without any alerts and cover broadly. More importantly, improper Crisis Leadership would result in the situation more difficult. For organizations, being able to predict the occurrence of crises would be the best condition for reducing losses. Unfortunately, most situations appear contrarily as crises often occur suddenly and strictly test the crisis leadership of an organization. The discussion about Crisis Leadership focused more on the USA after World War II. Although it has been a long period of time, most US enterprises still pay for it. Aiming at the sufferers of The 88 Taiwan Flood, total 600 copies of questionnaires are distributed in this study. Having deducted invalid and incomplete ones, total 327 copies are valid, with the retrieval rate 55%. The research results show partially positive correlations between Crisis Leadership and Quality of Reconstruction Product, Quality of Service Personnel, and Connotation of Recovery Service in Satisfaction with Post-Disaster Recovery and Demographic Variables appear significant moderating effects on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery.

Keywords: crisis leadership, post-disaster recovery, satisfaction, learning, decisions, supervision

Introduction

Modern crises are getting more complicated, as they are not regionally restricted in the common boundary, rapidly entangled with other in-depth sub-problems, and affected for a long period of time. Modern crises are the products of modernization, such as globalization, relaxation of rules, information communication technology, and economically social development. Such development has the entire world be mutually entangled and easily encounter invasion. Relatively

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slight coincidence could be rapidly expanded in such large-scale and complicated structure. Furthermore, organizational chaos, media pressure, and deceptive information could result in leaders not making satisfactory decisions for crises. Besides, people present different cognition on modern crises. The social and cultural environments burst out from modern crises appear distinct psychological characteristics perceived by people, whose fragile and breakable awareness is therefore increasing. Even when the memory of world wars is dying away, political terrorism is decreasing, and modern nations have proven to be reliable and effective guardians, the sense of unease is still expanding. In the past decade, some nations have experienced more disturbances and disasters. The USA and other western nations are still suffering from the shock of September 11 Attacks and the attrition warfare against terrorism. Scientists alert that global crises of medicine, ecology, technology, and biology are also threatening people. The mutual impact between various factors and the mind of the public has formed the risky and vulnerable mental set. Generally speaking, crises cannot be merely imputed to extrinsic power, but depend on the psychological endurance of the public. However, such an idea can hardly harmonize the public depression. A lot of citizens are afraid of crises and show ridiculous understanding on the complexity of crises. Crises therefore become an enormous shock and the citizens expect to be protected by the nation. Nonetheless, the post-investigation often reveals the lapse of policy and the failure of crisis leadership that the public trust in the governmental institutes supervising the practice of normal rules is decreasing. A lot of media arbitrarily exaggerate crisis events that people become destructive. To sum up, modern crises present stronger and larger controversy that leaders are suffering from enormous pressure. In consideration of the changeable properties and contents of modern crises, the function of leaders in modern crises needs to be re-estimated.

Crisis Leadership

Robbins (2008) indicated that crises were independently changeable and chaotic events, which were not clearly arranged with linear time sequence. Liu & Hsu (2009) mentioned that a crisis could be smoldering, explosive, ceased, and re-exploded; such a type largely relying on real events also relied on the description and interpretation of mass media, the citizens, and political hierarchy. Robbins (2008) pointed out the appearance of political opponents when crisis leaders sought for the termination of crises that improper handling could result in greater political crises. Furthermore, crises reveal the characteristics of broad coverage, increasing complexity, and strengthening political color that they enhance the risk for crisis leaders. Liu & Wang (2006) indicated people's doubts about crisis leaders not being responsible for any crises that crisis leaders had to eliminate their doubts, be well-prepared for the appearance of any possible crises, and take effective measures to protect the public, restrain harm, and compensate the losses.

Liu (2006) mentioned that any behaviors deviating from the standard would enhance the public's sense of unease and result in strong criticism. What is more, formulating and practicing preventive measures and preparation should be transferred from higher-level crisis leaders to medium-level ones and practice institutes.

Boin and Hart (2003) explained Crisis Leadership as a series of dynamic behaviors, from prevention, response, to post events, through management levels to protect the organization from negative results caused by crises. The occurrence of crises could be sudden and permanently developed; nevertheless, there were always symptoms before crises. Crisis leaders therefore had to permanently plan, learn and feedback in order to reduce the harm down to the lowest. It covered the detection of crisis information, the preparation and prevention of crises, and the control and handling of damage, the engagement in recovery, and learning and feedback (Booth, 1993). Lee (2003) proposed five dimensions covered in Crisis Leadership. (1) Crisis Forecasting. Most researchers stressed on Crisis Forecasting, through which the occurrence of crises could be reduced and the alert and preparation for crises could be completed. (2) Crisis Identification. Crisis Identification was the key for a leader effectively dealing with crises. Merely overall understanding the properties and situations of crises could the responsive crisis decisions be formulated. (3) Crisis Response. Crisis Response contained crisis control and crisis solving. Merely maximally controlling the effects and progress of crises could more initiatives could be mastered to solve crises and to further benefit the handling of crisis events. (4) Crisis Recovery. The effects of crises should be removed as earlier as possible after the crisis so as to return to the normal as soon as possible. (5) Crisis Learning. Comprehensively reflecting the crisis event, completing the system, and promoting changes could enhance the coping capability with crises.

Satisfaction with Post-Disaster Recovery

Guan (2010) indicated that the government should provide more creative and pioneering relief measures for sheltering and placing sufferers step by step, in addition to increasing subsidies according to current regulations. Other assistance included the measures of employment services, unemployment subsidies, and occupational trainings, the policies of mortgage, tax, and conscription as well as home reconstruction.

Lin (2007) mentioned that excellent post-disaster recovery could actually satisfy the diverse demands of sufferers that Satisfaction with Post-Disaster Recovery was the holistic assessment of labor reconstruction and subsidy measures according to the past experiences. Joewono & Kubota (2007) pointed out the differences of dissatisfaction, satisfaction, and delight in products, services, quality, prices, and schedule among sufferers. Chih (2007) regarded Satisfaction

with Post-Disaster Recovery as the results of offering sufferers with relief services that the better satisfaction with the services presented the higher perceived satisfaction of the sufferers. Huang (2007) considered Satisfaction with Post-Disaster Recovery as the subjective emotion and rational perception in the evaluation process after disaster relief. Yang (2002) mentioned it as the satisfactory attitudes after receiving subsidy measures. Russell-Bennett, McColl-Kennedy & Coote (2007) pointed out Satisfaction with Post-Disaster Recovery as sufferers being satisfied when the relief measures were higher than the expectation. On the contrary, when the assistance measures offered by the government were lower than the expectation, the sufferers would be extremely dissatisfied. Szymanski & Henard (2001) classified the dimensions of Quality of Reconstruction Product, Quality of Service Personnel, and Connotation of Recovery Service as the indices of Satisfaction with Post-Disaster Recovery. (1) Quality of Reconstruction Product referred to the satisfaction of sufferers with the reconstruction products and the quality offered by public sectors. (2) Quality of Service Personnel referred to the satisfaction of sufferers with the service attitudes and abilities of service personnel in public sectors. (3) Connotation of Recovery Service referred to the satisfaction of sufferers with the integration and convenience of services provided by public sectors.

Research hypothesis

Guan (2010) mentioned that governmental crisis leaders should communicate with sufferers and propose more effective post-disaster recovery policies to solve the recovery problems for sufferers. Chiang (1996) pointed out the significant dissatisfaction of sufferers with post-disaster recovery construction and house mortgage that governmental crisis leaders should communicate with the sufferers and proposed more suitable policies for the Satisfaction with Post-Disaster Recovery. Yang (2003) discovered remarkably different opinions between male and female sufferers about the post-disaster recovery policies after The 921 Earthquake, where males expressed stronger dissatisfaction as they bore heavier living burden, while females tended to agree with the governmental policies. The satisfaction also appeared notable differences on the age.

Aiming at above statements, the following research framework and research hypotheses are proposed in this study.

- *H1:* Crisis Leadership shows significantly positive correlations with Quality of Reconstruction Product in Satisfaction with Post-Disaster Recovery.
- *H2:* Crisis Leadership presents remarkably positive correlations with Quality of Service Personnel in Satisfaction with Post-Disaster Recovery.
- *H3*: Crisis Leadership reveals notably positive correlations with Connotation of Recovery Service in Satisfaction with Post-Disaster Recovery.

- *H4:* Gender appears significant moderating effects on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery.
- *H5:* Age shows remarkable moderating effects on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery.
- *H6:* Educational background presents notable moderating effects on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery.
- *H7:* Monthly income reveals outstanding moderating effects on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery.

Conceptual framework for this study

Summing up the above literatures, the conceptual framework (Figure 1) is drawn to discuss the correlations among demographic variables, Crisis Leadership, and Satisfaction with Post-Disaster Recovery.
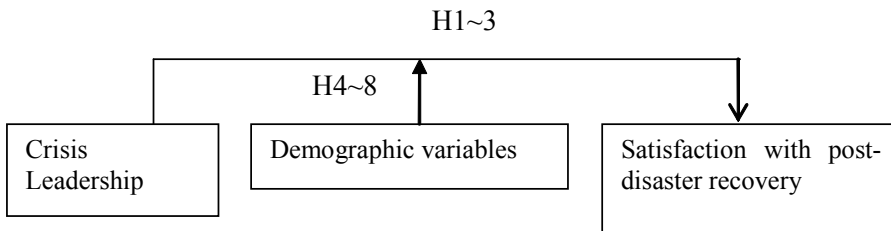

Figure 1: *Research framework*

Research method

Sample analysis in the research framework

The 88 Taiwan Flood, caused by the attack of Typhoon Morakot, occurred on August 6-10, 2009, in central, southern, and eastern Taiwan, when the southwesterly flow brought tremendous rain and caused flood and mudslide. With such heavy rain, mountainous tribes in Pingtung County were seriously harmed, in which Hsiaolin Village in Jiahsien Township was completely destroyed and hundreds of citizens were buried; merely few of them survived. Besides, serious losses also appeared in Tainan County and Nantou County, where the rapid flow resulted in various floods. Televised images of landslide and mudslide in Nantou County and Taitung County washing away houses and interrupting the traffic became the disaster focus.

Sampling and data analysis

By on-site distributing and collecting questionnaires, the sufferers of The 88 Taiwan Flood are distributed 600 copies of questionnaires. Having deducted invalid and incomplete ones, 327 copies are valid, with the retrieval rate 55%. Each retrieved copy is regarded as a valid sample. The collected questionnaires are proceeded data analyses with SPSS, and Factor Analysis, Reliability Analysis, Regression Analysis, and Analysis of Variance are applied to testing the hypotheses.

Analysis

Regression Analysis is utilized for understanding the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery, and Analysis of Variance is further applied to discussing the effects of personality traits on Crisis Leadership and Satisfaction with Post-Disaster Recovery.

Research result and analysis

Factor Analysis of Crisis Leadership

Referring to Lee (2003), five dimensions were acquired with Factor Analysis for Crisis Leadership, and the Cronbach α appeared 0.80 (Crisis Forecasting), 0.81 (Crisis Identification), 0.85 (Crisis Response), 0.85 (Crisis Recovery), and 0.85 (Crisis Learning). Principal Component Factor Analysis was further preceded. After the oblique rotation, the variance explained reached 80.437%. Referring to Mayer, Allen & Smith (1993), three dimensions were acquired with Factor Analysis for Satisfaction with Post-Disaster Recovery, and the Cronbach á showed 0.88 (Affective Commitment), 0.83 (Continuance Commitment), and 0.87 (Normative Commitment). With Principal Component Factor Analysis and the oblique rotation, the variance explained achieved 78.674%.

Correlation Analysis between Crisis Leadership and Satisfaction with Post-Disaster Recovery

- *Correlation Analysis between Crisis Leadership and Quality of Reconstruction Product in Satisfaction with Post-Disaster Recovery*. Applying Regression Analysis to testing the hypotheses, Table 2, Crisis Identification (βeta=0.184, $p<0.05$), Crisis Response (βeta=0.233, $p<0.01$), Crisis Recovery (βeta=0.195, $p<0.01$), and Crisis Learning (βeta=0.216, $p<0.01$) presented significant effects on Quality of Reconstruction Product in Satisfaction with Post-Disaster Recovery that H1 was partially agreed.

- *Correlation Analysis of Crisis Leadership and Quality of Service Personnel in Satisfaction with Post-Disaster Recovery*. Using Regression Analysis for testing the hypotheses, Table 2, Crisis Response (βeta=0.176, $p<0.05$), Crisis Recovery (βeta=0.202, $p<0.01$), and Crisis Learning (βeta=0.229, $p<0.01$) revealed remarkable effect on Quality of Service Personnel in Satisfaction with Post-Disaster Recovery that H2 was partially agreed.

- *Correlation Analysis between Crisis Leadership and Connotation of Recovery Service in Satisfaction with Post-Disaster Recovery*. With Regression Analysis to test the hypotheses, Table 2, Crisis Identification (βeta= 0.142, $p<0.05$), Crisis Response (βeta=0.163, $p<0.05$), Crisis Recovery (βeta=0.226, $p<0.01$), and Crisis Learning (βeta=0.215, $p<0.01$) showed notable effects on Connotation of Recovery Service in Satisfaction with Post-Disaster Recovery that H3 was partially agreed.

Table 1. *Regression Analysis between Crisis Leadership and Satisfaction with Post-Disaster Recovery*

Independent variable / Dependent variable	Satisfaction with Post-Disaster Recovery								
	Quality of Reconstruction Product			Quality of Service Personnel			Connotation of Recovery Service		
Crisis Leadership	β	Beta	ρ	β	Beta	ρ	β	Beta	ρ
Crisis Forecasting	1.382	0.119	0.172	0.821	0.073	0.563	1.579*	0.142	0.041
Crisis Identification	1.937*	0.184	0.013	1.122	0.108	0.317	1.334	0.115	0.194
Crisis Response	2.467**	0.233	0.000	1.836*	0.176	0.017	1.722*	0.163	0.021
Crisis Recovery	2.041**	0.195	0.002	2.137**	0.202	0.000	2.336**	0.226	0.000
Crisis Learning	2.322**	0.216	0.000	2.433**	0.229	0.000	2.277**	0.215	0.000
F	33.815			37.422			43.845		
Significance	0.000***			0.000***			0.000***		
R2	0.296			0.326			0.371		
Regulated R2	0.037			0.042			0.053		

Note: * *stands for p<0.05, **stands for p<0.01.*

Data source: Self-organized in this study

Moderating effects of demographic variables

- *Effects of gender on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery*. With Analysis of Variance, the empirical results, Table 2, showed the significant moderating effects of gender on the correlations between Crisis Response, Crisis Recovery and Quality of Reconstruction Product, between Crisis Identification, Crisis Recovery and Quality of Service Personnel, and between Crisis Identification, Crisis Response and Connotation of Recovery Service that H4 was partially agreed.

- *Effects of age on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery*. With Analysis of Variance, the empirical results, Table 2, revealed the notable moderating effects of age on the correlations between Crisis Identification, Crisis Response and Quality of Reconstruction Product, between Crisis Forecasting, Crisis Recovery, Crisis Learning and Quality of Service Personnel, and between Crisis Identification, Crisis Recovery and Connotation of Recovery Service that H5 was partially agreed.

- *Effects of educational background on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery*. The empirical results with Analysis of Variance, Table 2, presented the remarkable moderating effects of educational background on the correlations between Crisis Response, Crisis Learning and Quality of Reconstruction Product, between Crisis Recovery and Quality of Service Personnel, and between Crisis Identification, Crisis Recovery and Connotation of Recovery Service that H6 was partially agreed.

- *Effects of monthly income on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery*. The empirical results with Analysis of Variance, Table 2, appeared the moderating effects of monthly income on the correlations between Crisis Response, Crisis Recovery and Quality of Reconstruction Product, between Crisis Identification, Crisis Response and Quality of Service Personnel, and between Crisis Forecasting, Crisis Recovery and Connotation of Recovery Service that H7 was partially agreed.

Table 2. *Effects of demographic variables on the correlations between Crisis Leadership and Satisfaction with Post-Disaster Recovery*

Demographic variable	Contents of Crisis Leadership	Satisfaction with Post-Disaster Recovery		
		Quality of Reconstruction Product	Quality of Service Personnel	Connotation of Recovery Service
Gender	Crisis Forecasting	Not significant	Not significant	Not significant
	Crisis Identification	Not significant	Significant	Significant
	Crisis Response	Significant	Not significant	Significant
	Crisis Recovery	Significant	Significant	Not significant
	Crisis Learning	Not significant	Not significant	Not significant
Age	Crisis Forecasting	Not significant	Significant	Not significant
	Crisis Identification	Significant	Not significant	Significant
	Crisis Response	Significant	Not significant	Not significant
	Crisis Recovery	Not significant	Significant	Significant
	Crisis Learning	Not significant	Significant	Not significant
Educational background	Crisis Forecasting	Not significant	Not significant	Not significant
	Crisis Identification	Not significant	Not significant	Significant
	Crisis Response	Significant	Not significant	Not significant
	Crisis Recovery	Not significant	Significant	Significant
	Crisis Learning	Significant	Not significant	Not significant
Monthly income	Crisis Forecasting	Not significant	Not significant	Significant
	Crisis Identification	Not significant	Significant	Not significant
	Crisis Response	Significant	Significant	Not significant
	Crisis Recovery	Significant	Not significant	Significant
	Crisis Learning	Not significant	Not significant	Not significant

Data source: *Self-organized in this study*

Conclusion

The above research results present the significant effects of Crisis Leadership on Satisfaction with Post-Disaster Recovery. Crisis Leadership tends to top-down and commanding control. When facing emergent threats, simplifying policies could enhance the response of the government, without endless negotiation or compromise with the public; instead, decisions and orders could be made and enacted for the practice. The greatest threat for modern people is the frequent crisis events. Generally speaking, crises could bring great challenge and seldom opportunities. People naturally expect the government being able to show excellent Crisis Leadership on the crises, while leaders should effectively encounter the challenges and satisfy the expectation of the public. Public safety is the major task for leaders, who have to make the worse prediction, formulate prevention

policies, and establish alert systems before crises, reinforce leadership and responsibility, definitely guide the direction, and negotiation with different parties to form effective crisis response network during crises, and comfort sufferers, organize subsidies for recovery, and draw the lesson after crises. Moreover, leaders should accurately master in the opportunities from crises, build up correct innovative principles, absorb the opinions of the opponents, and win the sufferers' Satisfaction with Post-Disaster Recovery.

Suggestion

Based on the above conclusion, the following suggestions are further proposed in this study.

(1) *Inheritance of experiences in Crisis Leadership*. Management effectiveness and knowledge are greatly related to the inheritance of experiences. A leader could construct share-database, allowing the exchange among different departments and reducing inconsistency when replacing posts. More aggressively, a leader could reinforce and modify the operation procedure for crisis handling and operate the "scripts" under distinct situations in the normal administration.

(2) *Team establishment and understanding development in Crisis Leadership*. A leader could integrate crisis-related teams, aiming to uniform the crisis handling principles and procedure so as to avoid the repetition of resource allocation. Especially, the supervisors should cultivate the crisis awareness in the normal businesses in order to cultivate the crisis leaders with problem-solving capabilities. Dealing with sudden disasters requires the division of labor and the team with favorable negotiation, and the command center should be continuously operated day and night. Such a command center should be composed of major supervisors and senior employees with regular practice so that every supervisor could undertake the task of "chief commander". Crises are unpredictable that the training of members in a command team cannot be neglected.

(3) *Concerning about sufferers acquiring Satisfaction with Post-Disaster Recovery.* After crises, the government should highly concern about the sufferers, immediately satisfy the demands for materials and mind, and financially compensate and assist in the following time so as to dissolve crises and cure the mental injuries.

Acknowledgments

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