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The Role of Strategic Thinking in the Quality of Crisis Management Operations

Farid Allahveisi[1]*, Kumars Ahmadi[2], Mohammad Bagher Mohammadi[3]

[1] Master of Business Administration Islamic Azad University, Sanandaj Branch, Iran,
[2] Assistant Professor, Faculty Member of Islamic Azad University, Sanandaj Branch, Iran,
[3] Maneging Director of Red Crescent Society (RCS) Kurdistan Province, Iran.

***Corresponding Author:**

Abstract: *Crisis has a common and applied concept in various sciences and planning areas for naming incidents and events that affect society and organization. Along with the growth, development and evolution of societies, there have also been an increase more complex, more unknown, and more costly (fatality and financial) disaster hazards. In short, taking targeted action and doing the right thing in a right way in all management levels for overcoming the Crisis r are part of Principles and tasks of comprehensive disaster management. It should be noted that this issue has a great importance in Iranian Red Crescent Society. The purpose of this study is to identify the relationship between strategic thinking and disaster management in the Kurdistan Red Crescent Society. In this regard, the standard questionnaires on strategic thinking and Crisis disaster management was distributed among the selected sample (111 individuals), which was analyzed by simple random sampling from the statistical population (181 people) consisting of managers, experts, officials, authorities and expert volunteers on disaster management. Face and content validity were used to determine the validity of the questionnaire, and the Cronbach's alpha method was used to measure the reliability of the questionnaire. This research is descriptive in terms of method, and from the correlation branch; in terms of time intervals this is a single cross-sectional study; and in terms of purpose, this is an applied study. The important findings of the research indicate that there is a positive and significant relationship between strategic thinking and its dimensions with disaster management, in which the system thinking dimension has the most significant relationship with disaster management.*

Keywords: *Strategic Thinking, Crisis Management, Iranian Red Crescent Society.*

INTRODUCTION

Crises are unfortunate and harsh events that have the potential to cause failure of an individual, organization, or society. Therefore, there is a critical need for knowledge and science to recognize, and hence find a better way to eliminate or avoid these crises. Disaster management is an applied science that seeks to find tools by systematic observation of crises and their analysis through which the occurrence crises can be prevented or in the event of a disaster, take the needed actions for preparedness, a quick relief and situation recovery to reduce its effects. Since, Iran is one of the ten most catastrophic countries in the world (Fayyazi et al., 2008), that its share of natural disasters is 6% of the world's total disasters (Nasehi and Imani, 2010), and the fact that over the past 100 years more than 300,000 people have died in Iran due to the unforeseen accidents and incidents, and billions of rial of damage have been imposed to the society (Khademi and Aghanani, 2006), there is a great need to pay attention and consider the importance of disaster and its comprehensive management. Of course, given that rapid and severe changes in environmental factors

necessitate the use of strategic management and having strategic thinking for eliminating ambiguity and making sense for the environment, this confirms the need for strategic thinking to improve the quality and performance of disaster management for Managers of this field. In fact, the strategic thinking of managers - which is a kind of insight and understanding of the present condition and utilizing abilities that result in better response to the circumstances - increases the quality and performance of disaster management. Strategic thinking as a new perspective and has renewed vision of the old strategic management thinking (Jelenc, 2009).

Theoretical Foundations

Considering that the Crisis management is an applied science that seeks to find tools by systematic observation of crises and their analysis through which the occurrence crises can be prevented or in the event of a disaster, take the needed actions for preparedness, a quick relief and situation recovery to reduce its effects, so proper and true response, understanding the circumstances of the disaster in the early stages of dealing with disaster, requires sufficient knowledge, expertise, deep and realistic thinking and correct perception of the conditions (Unfocused Defense Website, 2016). Disaster hazards are more complex, deadly, and unknown than before, and in the future, along with the advances and complexities associated with it, crises will be also more complex, deadly, and unknown than now; Therefore, the need for a comprehensive and Futurist pattern of disaster is urgently necessary.

This must be pattern that examines all the levels of Crisis management measures in a coherent manner, seeks to analyze the disaster hazards before it occurs, analyzes them, and identify the damages caused by the disaster to some extent depending on the condition and therefore tries to coordinate the activities of all the responsible subsectors in the prevention and response of the disaster, and in the final stages can save society from disaster by right management and goal from the Crisis and re-establishes the balance. It can be said that Frederick Cuny's comprehensive disaster management model is newer, more comprehensive than other models, and has looked at different dimensions with a deeper and more applied than the last three dimensions before, during and after the disaster. Therefore, considering all of these reasons, this pattern has been used in this study (Frederick Cuny's comprehensive disaster management model).

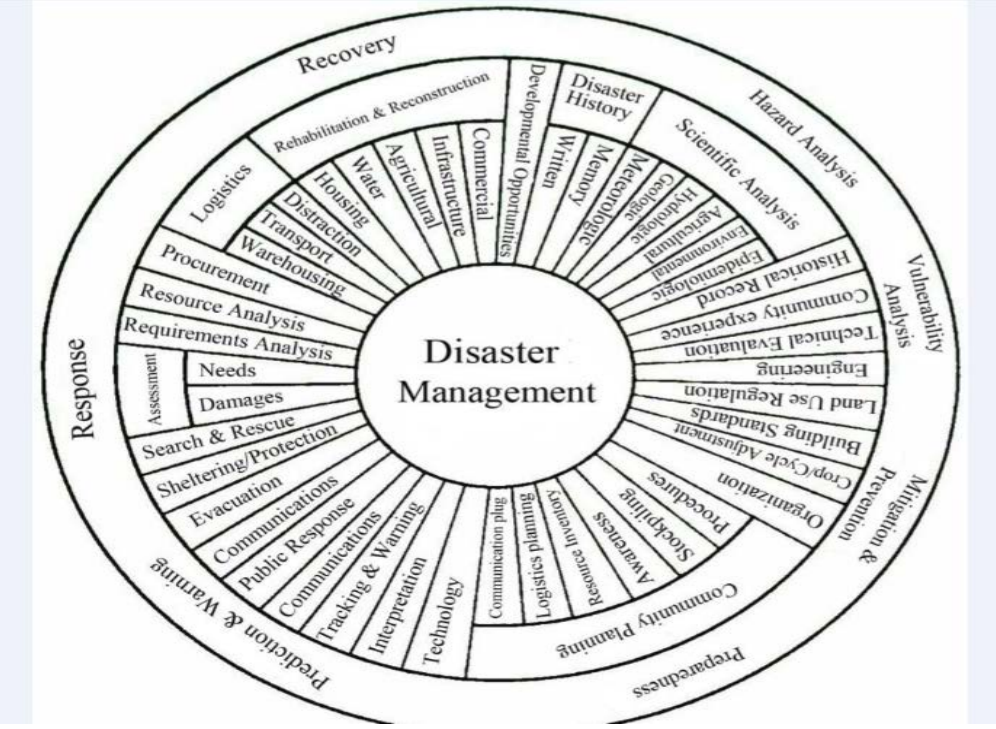


Figure 1. Crisis (Disaster) Management Model (Source: Frederick Cuny (1998))

Strategic thinking is a continuous process (Abraham, 2005), and its aim is to eliminate the ambiguity and making sense for a complex environment (Bonn, 2005). This process includes analysis of the situation, as well as the creative combination of the analysis results in the form of a successful strategic plan. Strategic thinking enables the manager to identify the effective factors in achieving the desired objectives and understand how these influential factors are valuable.Porter (1997) likens strategic thinking to a stick that keeps and sticks many of the sub-systems of the organization together (Tavakoli & Lawton, 2005). Strategic thinking is a continuous process that aims to eliminate ambiguity and makes sense for a complex environment.The Goldman model has been used for strategic thinking in this study. According to this model's dimensions, the Goldman model is a more efficient and comprehensive model for strategic thinking than other models, and it has paid more attention to Foresight and conceptual thinking, and therefore it has a more and better communication with the disaster management cycle and the understanding of the necessary management measures at different levels, including before, during and after the disaster.

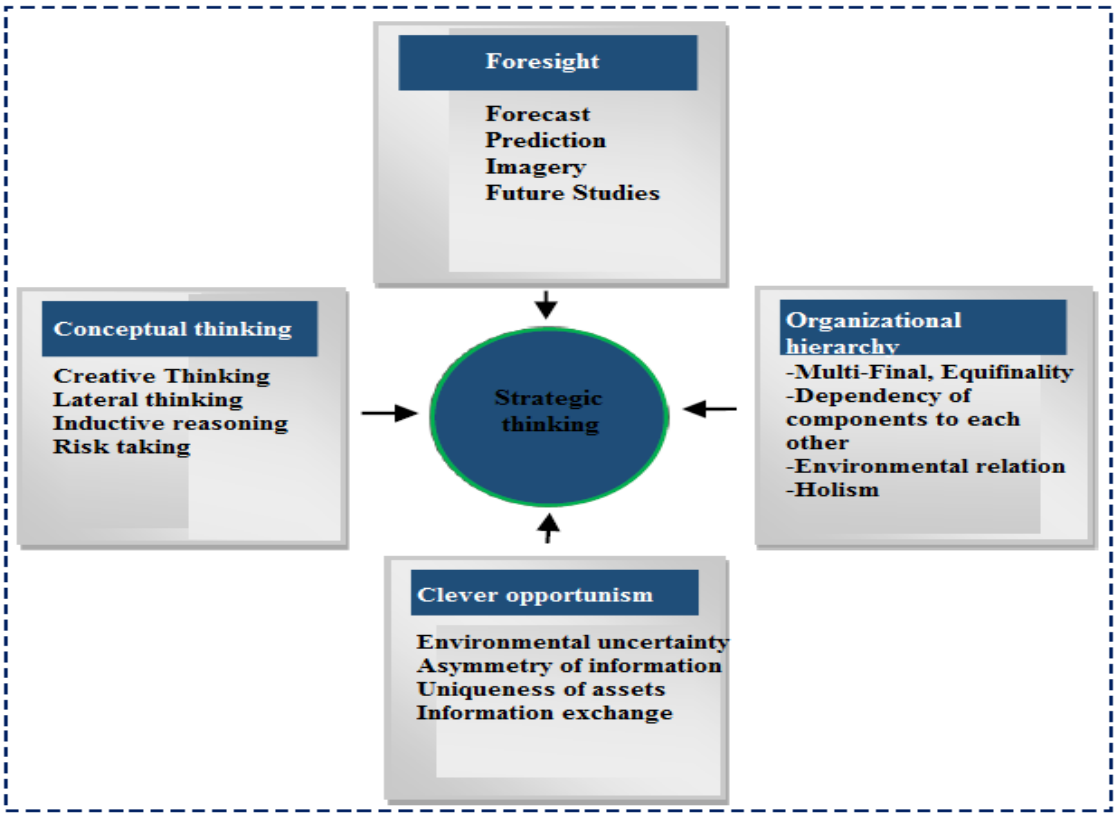
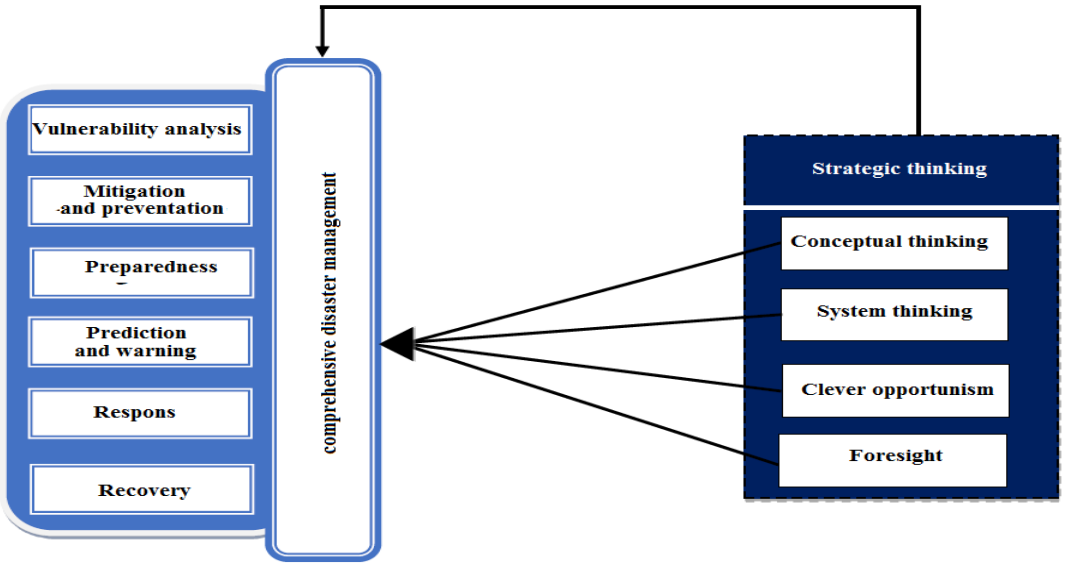


Figure 2. Conceptual Model of Goldman Model on Strategic Thinking (Goldman, 2008)

Therefore, according to the purpose of this study which examines the relationship between strategic thinking and disaster management a comprehensive model has been used in this regard.



Cuny's (1998) Goldman's (2008)

Figure 3. Conceptual model for investigating the relationship between strategic thinking and disaster management

Foreign literature background

Dorasamy et al. (2013) in a research entitled "The Role of Knowledge Management Systems in Supporting Disaster Management" stated that: Human is dramatically challenged by numerous forms of natural or man-made disaster. Emergency conditions cannot be prevented, but can be better managed. Successful management of emergency conditions (disaster conditions) requires proper planning, guidance, performance and coordinated efforts throughout the disaster management cycle. Researches show that emergency management efforts can be improved by disaster management information management systems based on integrated information (SIME) (Dorasamy et al., 2013). Seppänen, and Virrantaus (2015) in an article entitle "role of shared condition information and information quality in disaster management" stated that: the importance of timely and accurate information for relevant respondents is essential in response to a disaster. Efforts to confront the disaster are based on realities of the present condition. If the relevant information does not have the efficient quality to meet the needs, it won't be enough by itself. In fact, quality is mainly focused on the manufacturer's point of view on quality of the information system. As a result, a broad approach is needed to combine information in specific fields with different aspects of information quality (Seppänen and Virrantaus, 2015). Boyong Joun Moun, (2013) in a research entitle "the results and backgrounds of strategic thinking" has stated that: This research focuses on the factors influencing strategic thinking at the organizational level. This research provides a hypothesized model relevant to internal and external variables of the company about the strategic thinking at the organizational level, which is linked to the marketing performance. The results show that there is a positive relationship between strategic thinking and marketing performance (Byeong_Joon, Moon, 2013).

Najah Othman and Hafez Qasim (2015) in their article "Searching for Thinking Strategies Skills in Second Language Teaching Processes" stated that: This paper has been conducted on the application of strategic thinking skills based on task-oriented processes to help to improve language learning as second language at Malaysian universities. The results showed that task-oriented processes have been effective in improving learning (Osman and Kassim, 2015). Bajkar et al. (2015), in a research entitled "When Leaders Become Strategists," have stated that: This research demonstrates the fundamental role of cognitive, motivational and behavioral processes in leadership, especially in realizing and cooperating effectively with individuals. The provided results are clear in what can be considered as the usual behavior of organizational leaders in

determining the strategic thinking for human resources management and effective work in the organization. The results show that the mental operational processes during implementation in the organization are particularly important (Bajcar et al., 2015).

Methodology

This is an applied research in terms of purpose, and in terms of the nature, data collection and the analysis method it is a descriptive study from correlation type. The statistical population of this research includes senior, middle and operational managers, disaster management experts, responsible custodians, volunteers as well as officials of Provincial Road Relief and Rescue Bases, who are identified as experts in Red Crescent Society in the field of Kurdistan disaster management, in this research, which is based on 1396 statistics including 180 people. Also, to eliminate the effects of missing and incomplete questionnaires and unanswered questions by respondents on the results of the survey, the sample of the study was increased to 130 people (10% was added to the initial volume), and finally 119 questionnaires were completed and collected.

Table 1. Cronbach's alpha rate

The concept under evaluation Characteristics of the population	Dimensions	Cronbach's alpha coefficients	Total Coefficient
Strategic thinking	Conceptual thinking	0.70	0.86%
	System thinking	0.71	
	Clever opportunism	0.74	
	Foresight	0.77	
Crisis management	Risk and Vulnerability Analysis	0.85	0.88%
	Mitigation and prevention	0.85	
	Preparedness	0.89	
	Prediction and initial readiness	0.81	
	Confront	0.79	
	Recovery	0.73	
Questionnaire on the Relationship between Strategic Thinking and Crisis Management			0.89%

In order to evaluate the face and content validity, the questionnaire and its contents were reviewed by the doctoral advisor and experts and their corrective comments were considered.

Data analysis

Table 2. The results of Kolmogorov–Smirnov test on Strategic thinking

Research components	Significant level	Error	Result
Strategic thinking	0.82	0.05	Normal
Conceptual thinking	0.052	0.05	Normal
System thinking	0.061	0.05	Normal
Clever opportunism	0.188	0.05	Normal
Foresight	0.071	0.05	Normal

Table 3. The results of K–S Test on Crisis management

Research components	Significant level	Error	Result
Disaster management	0.650	0.05	Normal
Risk and Vulnerability Analysis	0.050	0.05	Normal
Mitigation and prevention	0.453	0.05	Normal
Preparedness	0.645	0.05	Normal
Prediction and initial readiness	0.090	0.05	Normal
Confront	0.084	0.05	Normal
Recovery	0.053	0.05	Normal

As you can see in the table above, all variables and research dimensions (except for risk and vulnerability analysis) have a significant level of greater than 0.05; in other words, these variables are normal and parametric tests (Pearson test) should be used for testing the hypotheses associated with these variables.
Considering the significance level (sig) obtained from the previous tables, the normality of all the research structures are verified; therefore, Pearson's two-variable correlation test was used to test the research questions in this study.
H_0 means that there is no significant relationship between the two variables, and H_1 means that there is a significant relationship between the two variables.

Table 4. The results of the significance level and the correlation coefficient between strategic thinking and its dimensions with disaster management

	Comprehensive disaster management		
	The correlation coefficient	Significance level	Sample
Conceptual thinking	0.304**	0.001	119
System thinking	0.322**	0.000	119
Clever opportunism	0.300**	0.001	119
Foresight	0.262**	0.004	119
Strategic thinking	0.386 **	0.000	119

According to the results obtained from above table, significance level in all items is less than 0.01, which rejects the H0 and accepts H1 (research hypothesis) and indicates the relationship between strategic thinking and all of its dimensions with disaster management. The results of significant level and the correlation coefficient obtained from the table above are presented as follow:

Strategic thinking

According to the results of the above table, significance level is equal to 0.000, and it shows that h0 is rejected and H1 (research hypothesis) is accepted, which is based on the relationship between strategic thinking and disaster management. Therefore, at the 99% level, there is a positive and significant relationship between strategic thinking and disaster management and its correlation coefficient is equal to 0.386.

Data Analisis

According to the results of the above table, significance level is equal to 0.000, and it shows that h0 is rejected and H1 (research hypothesis) is accepted, which is based on the relationship between conceptual thinking and disaster management. Therefore, at the 99% level, there is a positive and significant relationship between conceptual thinking and disaster management and its correlation coefficient is equal to 0.0.304.

According to the results of the above table, significance level is equal to 0.000, and it shows that H_0 is rejected and H1 (research hypothesis) is accepted, which is based on the relationship between system thinking and disaster management. Therefore, at the 99% level, there is a positive and significant relationship between system thinking and disaster management and its correlation coefficient is equal to 0.322.
According to the results of the above table, significance level is equal to 0.001, and it shows that H_0 is rejected and H_1 (research hypothesis) is accepted, which is based on the relationship between Clever opportunism and disaster management. Therefore, at the 99% level, there is a positive and significant relationship between clever opportunism and disaster management and its correlation coefficient is equal to 0.300.
According to the results of the above table, significance level is equal to 0.004, and it shows that h0 is rejected and H1 (research hypothesis) is accepted, which is based on the relationship between foresight and disaster management. Therefore, at the 99% level, there is a positive and significant relationship between foresight and disaster management and its correlation coefficient is equal to 0.262.
The result of normal distribution of errors evaluation test is presented in figure 3. As it can be seen, the mean value is very little and near to zero and the standard deviation is near to 1. Therefore, according to the information above, H0 is rejected and H1 is confirmed based on the normal distribution of errors.

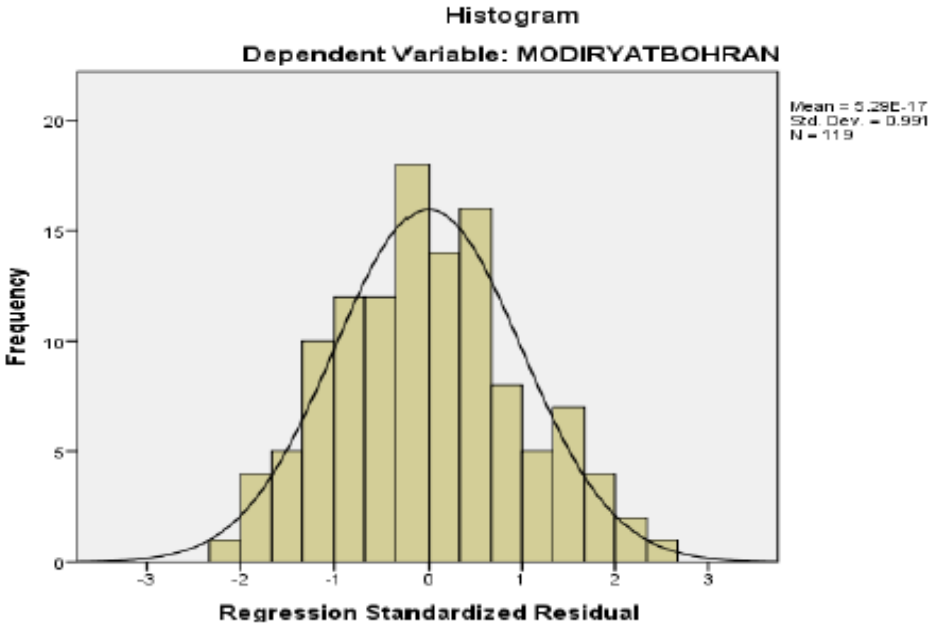


Figure 3. Normal distribution of errors

Durbin-Watson Test results are presented in table 5. As it can be seen, the value of Durbin-Watson Test is equal to 1.970 and since this value is between 1.5 to 2.5, the H0 is rejected and H1 is accepted, which is based on independency of errors.

Table 5. Durbin-Watson Test results

determination coefficient	moderated coefficient	standard error	Durbin-Watson value
0.772	0.596	0.563	1.970

ANOVA test and F static test were used in order to evaluate the existence of a linear relationship between two variables. The results of the test are presented in table 6. As it is presented, F static value is equal to 20.397 and its significance level (0.004) is less than 0.05. Therefore, with the 95% confidence level, h0 is

rejected and h1 is accepted, which is based on the existence of linear relationship between variables of strategic thinking on disaster management in members of Kurdistan Red Crescent Society.

Table 6. ANOVA Test

Analysis of variance (ANOVA)					
Model	Sum of squares	Freedom Degree	The mean difference	F statistics	The significance level
regression	4.241	1	0.848	30.397	0.004
residual	39.631	117	0.354		
Total	43.873	118			

In order to determine the rate and direction of the effect of this variable on the dependent variable, beta coefficients are also calculated. The result of this evaluation is presented in the following table:

Table 7. Beta coefficients to determine the rate and direction of the effect of variables in the main hypothesis

Dependent variable (Crisis management)						
		Standardized coefficients		Beta Standardized coefficients	T-statistics	The significance level
		B	Standard error			
Strategic thinking	Constant value	2.371	0.445		7.572	0.000
	X1 Conceptual thinking	0.233	0.100	0.149	1.328	0.002
	X2 System thinking	0.209	0.082	0.160	1.329	0.001
	X3 Clever opportunism	0.141	0.071	0.162	1.575	0.006
	X 4 Foresight	0.185	0.088	0.120	1.190	0.000

As it can be seen in tables 4-16, given the Non-standard coefficients of beta value, t-statistic and significance levels can create the regression equation as follows:
(Crisis management) Y = 2.371 + 0.233 Conceptual thinking + 0.209 System thinking + 0.141 Clever opportunism + 0.185 Foresight. Therefore, the main hypothesis of the research is confirmed. It means that, Conceptual thinking, System thinking, clever opportunism, Foresight have significant effect on disaster management in Members of Red Crescent Society of Kurdistan Province. Given the determinant coefficient value (R2) in table 1, independent variables with the sum of 0.59, explain the disaster management in Members of Red Crescent Society of Kurdistan Province; it means that 0.59 of changes in disaster management can be explained by strategic thinking variable.

Conclusion

Policy-making, making managerial decisions and carrying out executive actions at different stages and levels of disaster management are the tasks of disaster managers. Managers who use strategic thinking have certain behaviors, trends and intellectual skills. The distinctive features of strategic thoughtful managers are the interest and the sensitivity to the conditions, flexibility in performance, Foresight, consultation, opportunism and depth. In addition to these, strategic thinking for disaster managers allows them to link different levels of management (mega, macro, and micro) and to comprehend the situation in a diverse and value environment.Given the importance and the influential role of the strategic thinking on disaster management, and the meaningful relationship between these two variables, one can conclude that separation from the usual thinking and the expansion of strategic thinking will enable the quality of disaster management operations in the Red Crescent Society of Kurdistan province. Although this research was a case study in Kurdistan province, but it can be considered as a default, specifically in Red Crescent Society in

other parts of the country. With regard to the value of determinant coefficient (R2), strategic thinking has a great impact on disaster management, and about 60% of the understandable and variable changes of disaster management can be predictable under the influence of strategic thinking, in which the contribution of conceptual thinking, as one on the components of the strategic thinking is greater than other components.

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