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Designing a model for Effective crisis management in the organization through Learning by Experience (case study: selected organizations in Isfahan chamber of crisis management)

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تصميم نموذج لإدارة الأزمات الفعالة في المنظمة من خلال التعلم بالتجربة (دراسة حالة : منظمات مختارة في غرفة إدارة الأزمات في أصفهان) .

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المستخلص :

الغرض من هذه الدراسة هو تصميم نموذج للإدارة الفعالة للأزمات في المنظمة من خلال التعلم بالتجربة والتحقق من صحته في منظمات مختارة في غرفة إدارة الأزمات في أصفهان. هذه الدراسة تطويرية من حيث النوع، وصفية ارتباطية ، مسحية مقطعية من حيث وقت جمع البيانات، ومختلطة (نوعية – كمية) من حيث طبيعة البيانات ونهج البحث. يتكون المجتمع الإحصائي لهذه الدراسة في القسم النوعي من منظمات ومراكز مختارة تابعة لغرفة إدارة الأزمات في أصفهان ، والتي تم اختيارها عن طريق أخذ عينات هادفة. في الجزء الكمي ، يتكون المجتمع الاحصائي من ١٥٣ مختصاً في إدارة الأزمات في ١٢ منظمة فرعية لغرفة إدارة الأزمات في أصفهان. في الجزء النوعي من البحث ، تم تحليل المقابلات باستخدام طريقة التحليل الموضوعي. في الجزء الكمي من البحث ، تم تطوير الاستبيان من صنع الباحث باستخدام نتائج الجزء النوعي وتم استخدام هذا الاستبيان لجمع آراء المستجيبين . تم تأكيد صحة محتوى الاستبيان باستخدام آراء الخبراء. تم تقييم موثوقية الاستبيان باستخدام معامل ألفا كرونباخ (تركيبية). تم استخدام نهج تحليل العوامل الاستكشافية لتحليل البيانات التي تم الحصول عليها من القطاع الكمي باستخدام طريقة تحليل المكون الرئيسي. أظهرت نتائج تحليل البيانات في قسمين نوعي وكمي أن المتغيرات المتعلقة بالتعلم بالتجربة في مرحلة ما قبل الأزمة في شكل ٥ محاور رئيسية (وضع سيناريوهات للأزمات المحتملة، التفكير المنظومي، الذاكرة التنظيمية، إنشاء منظمة متعلمة، ومنع الإهمال التنظيمي)، المتغيرات المتعلقة بالتعلم بالتجربة في مرحلة ما قبل الأزمة في شكل ١ محور رئيسي (شبكة) البناء المناسب) والمتغيرات المتعلقة بالتعلم بالتجربة في مرحلة ما بعد الأزمة يمكن شرحها في شكل موضوعين رئيسيين (التحرك نحو منظمة تعليمية مع نهج سرد القصص والتدريب والتوجيه). بناء على نتائج اختبار فرضيات البحث ، يمكن استنتاج أن جميع العلاقات بين المراحل المختلفة للأزمة وإدارة الأزمات لها آثار إيجابية وكبيرة. الكلمات المفتاحية : التعلم بالتجربة ، الأزمة التنظيمية ، إدارة الأزمات التنظيمية ، التعلم في الأزمات

Abstract:
The purpose of this study is to design a model for effective crisis management in the organization through Learning by Experience and its validation in selected organizations in the Isfahan Crisis Management Room. The present study is developmental in terms of type, descriptive-correlational, survey-cross-sectional in terms of data collection time, and mixed (qualitative-quantitative) in terms of the nature of the data and research approach. The statistical population of this study in the qualitative section consists of selected organizations and centers under the Isfahan Crisis Management Chamber, which have been selected by purposive sampling . In the quantitative part, the statistical population consists of 153 experts in crisis management in 12 subsidiary organizations of the Isfahan Crisis Management Chamber. In the qualitative part of the research, the interviews were analyzed using thematic analysis method. In the quantitative part of the research, a researcher-made questionnaire was developed using the results of the qualitative part and this questionnaire was used to collect the opinions of the respondents . The validity of the content of the questionnaire was confirmed using the opinions of experts. The reliability of the questionnaire was assessed using Cronbach's alpha coefficient (combined). The exploratory factor analysis approach has been used to analyze the data obtained from the quantitative sector using the principal component analysis method. The results of data analysis in two qualitative and quantitative sections showed that the variables related to Learning by Experience in the pre-crisis phase in the form of 5 main themes (developing scenarios for possible crises, systems thinking, organizational memory, creating a learning organization, and preventing organizational neglect), variables related to Learning by Experience in the pre-crisis phase in the form of 1 main theme (network) Appropriate Construction) and the variables related to Learning by Experience in the post-crisis phase can be explained in the form of two main themes (moving towards a learning organization with a storytelling approach, coaching, and mentoring). Based on the results of testing the research hypotheses, it can be concluded that all the relationships between different phases of crisis and crisis management have positive and significant effects.

Keywords: Learning by Experience, Organizational Crisis, Organizational Crisis Management, Learning in Crisis.

1. Introduction:

Intra-crisis learning, which means learning from crises to prepare for future events, is a challenge for most organizations . Learning by Experience theory explains the areas of internal and external learning. Intrinsic learning describes learning processes that occur within organizational settings , (i.e., individual learning, in-task learning, meta-tasking learning, multi-level learning), while extrinsic learning refers to learning from the outside environment (i.e., customer learning, competitor learning, network learning). E, Institutional Learning.The crisis management system is a system consisting of some ministries, organizations and governmental, public, and private institutions and individuals that operate in the form of predefined organizations and with separate tasks with the aim of controlling, preventing, managing, rehabilitating and rehabilitating the crisis-stricken society. In Iran, the core of this system is the Crisis Management Organization, whose tasks are: identification, planning, organization, coordination, control, implementation, and finally reform the system (Farhangi et al., 2009)The challenges faced by businesses and, more broadly, humanity are not few. As the coronavirus pandemic has shown, there is no room for debate to say that our ability to adapt and respond to these challenges is not just to achieve prosperity and success, but to be able to survive and continue to survive (Cotter et al1., 2021)Organizational crisis management2is the systematic effort made by the organization's members and external stakeholders to address crises or effectively manage crises that occur (Pearson & Keller3, 1998: 16). A number of factors have been identified that contribute to the success or failure of crisis management. For example, studies show that leaders' perceptions of risk and leaders' ability to cope However, it has a direct effect on organizational cultural beliefs about the value and need for crisis management and the potential consequences of a crisisCrises take many forms. Some crises occur naturally, such as hurricanes, earthquakes, fires, and some originate in humans, such as bribery, corruption, major product defects, scandals, terrorist attacks. Despite the lack of a global consensus, there seem to be several features that have been considered by researchers to help understand the nature of crises, including that they They are very ambiguous, unknown, and unexpected, they are unlikely to occur, but they have a huge impact on the organization and the shareholders of the organization, they are a challenge to make decisions that may lead to better results or worse results. Some researchers acknowledge that natural disasters and man-made crises4 have a fundamental difference, and that is that organizations have little control over natural disasters, but they can prevent man-made crises by having appropriate systems, which is why the public and the majority tend to react more negatively to man-made crises (Antonokopla & Schaeffer, 2014)Research in the field of Learning

by Experience has significantly improved our understanding of the nature and practices of learning and knowledge in organizations. As recent studies on the state of this concept show, understanding and understanding learning dynamics is still a key challenge (Antonokopla et al5., 2008). This challenge is by considering the impact of learning on competitive advantage The organizational and strategic role of Learning by Experience on dynamic capabilities6, organizational friendliness7, and absorption capacity8 is becoming more vital and essential (Birkinshaw et al9., 2009). These concepts encourage organizations to adapt to frequent environmental changes and avoid repeating mistakes in order to absorb learning processes, and if they want to cope with uncertainty, they must learn from the experiences they encounter(Ellis & Davidi10, 2005). Learning from experience has definite effects on a variety of outcomes such as timely service11 or productivity of manufacturing plants (Argot et al12., 1990). If companies learn from experience, it is expected that the quality of this experience will affect the scope and effectiveness of learningIn order to achieve goals such as improving and facilitating crisis management in organizations so that these goals can be achieved through organizational learning, it is better to first think about which organizations, companies, or businesses crisis management is considered as a major challenge. On the other hand, it should be considered that as a result of the occurrence of a crisis in a business or in an organization, what percentage of the people in that organization and consequently how many people in the society may be involved in the consequences of that crisis or the damages caused by that crisis due to the mismanagement of the crisis. An organization can contribute to the effective management of the crisis. This fundamental question is based on three claims. First, crises cause organizational change. In other words, crisis management is a change management process that causes behavioral change and cultural change. Second, instead of being considered as a threat to organizational survival, organizational stability, or organizational development, it should be considered as an opportunity for learning that can lead to an increase in organizational adaptability, vitality, and longevity of the organization. Third, the greater the uncertainty in the environment, the greater the need for organizational learning. Finally, the study and research of the role of Learning by Experience in crisis management unveils new boundaries and research horizons for human resource development researchers, who may discover unknown topics that are considered vital and necessary for the ultimate success of the organization. The distinction between this research and other researches conducted in the fields of crisis management, organizational crisis management, and Learning by Experience is that it specifically tries to improve the effectiveness of crisis management in organizations by using organizational learning, and on the other hand, by selecting the research population, it tries to improve the status of management in the field of organizational crisis and can help effective crisis management. In other words, if the selected organizations in the research population can respond to the crises created within their organization in an appropriate way or predict the crises in an appropriate way or try to prevent them, they will be able to effectively manage the crises created in the city of Isfahan. Therefore, the present study will have some achievements for each of the organizations in the research community, and the accumulation of these achievements will lead to the improvement of the effectiveness of crisis management at a broader and macro level (Isfahan city).

2. Literature and Research Background

Crisis management requires skills that organizations can equip themselves with through learning and manage the crisis in the best possible way, and the skills of the organizational leader are addressed in these phases. Then, Learning by Experience in crisis management is described and explained. Then, the types of learning in crisis management are described and the interaction between Learning by Experience and crisis, learning from the crisis and its related barriers are discussed. In the following, the components affecting Learning by Experience in order to manage the crisis in three phases of crisis (before, during the crisis, and after the crisis) are explained.Before addressing the characteristics of a crisis situation and introducing a systematic approach to effective confrontation, it should be noted that the crisis is either directly caused in a system or the influence of external factors has disrupted the system. In both cases, our analysis can be carried out in the form of systematic considerations. Because ultimately, the task of crisis management is to make effective decisions based on correct information in order to reduce the damages and control the crisis quickly. Otherwise, decisions will be nothing but trial and error, and due to the three factors, time constraints, threats, and surprises, there can be no room for such an approach. Certainly, in all crisis planning, there will be room for unforeseen situations. Therefore, we can express the crisis based on the definition of the system as follows: The constituent parts of the system establish relations in the form of actions and reactions in a given framework based on measured and regulated criteria and criteria. In any system, the variable elements that make up it must be kept and protected within a certain boundary, otherwise the equilibrium of the system will be disturbed, to the point that it is possible to completely erase it. A crisis is a

situation in which the order of the main system or parts of it is disrupted and its stability is disturbed. In other words, a crisis is a situation that causes a sudden change in one or more of the variable factors of the system. The severity and weakness of crises depend on the aggravating factors or mitigating elements of the crisis and the available techniques for managing and controlling it. From an operational point of view, the crisis can be analyzed as a system, in which there are other different factors, one of which is the environment and structure of the system, and the other is the factors that cause the crisis. Determining which of the factors and elements of the system is more vulnerable and effective in the face of a crisis is one of the primary tasks of crisis management research. Disaster management can be considered as a complex system, intertwined with human thinking and based on social layers, which is characterized by complexity, fluidity, and uncertainty.Based on practical studies on the state of crisis management, it is possible to organize and manage the crisis faster and more efficiently by using systems thinking (Zhu et al13., 2018)Crisis is a phenomenon that has been extensively researched, but it is rarely studied in relation to non-profit organizations, but the various antecedents and consequences of crisis are often discussed as an inevitable factor. With proper and correct crisis management, it is possible to exploit the process of discovery-based learning, which creates and transfers knowledge and creates optimal performance. (Manu,14 2012). In a study, Lu et al. (2020) examine the difference in post-disaster reconstruction patterns of NGOs between the 2008 Wenchuan earthquake and the 2013 Lushan earthquake in China, which shows that organizational strategy has gradually changed from "resource-based" to "learning-based". Their approach changed and evolved from "providing resources" to "providing knowledge" as they transformed providers and recipients of assistance into collaborative learners, transformed a "resource provider" organization into a "learning organization," and shaped the decentralized participation of organizations into a collaborative learning ecosystem. Knowledge flowed in different directions and crises were managed in the best possible way" This example illustrates potential future directions for NGO involvement in disaster response in China (Lu et al15., 2020).Learning is essential for an organization to evolve, improve, and innovate. We are conditioned to recognize complex scenarios and apply quick solutions. Comparing the crisis management styles of airlines and airlines during Ebola and COVID-19, the question arises: "Has the industry learned how to learn?Attempts have been made to answer this question, and as a result, the study showed that the way the industry reacted to both crises was not far from single-loop learning, or in other words, the industry only reacted to the actions in a timely manner and forgot about any experience until the next crisis. Thus, the single-loop learning style may be the cause of the prevalence and promotion of more crises (Assi and et al.16, 2022)Learning by Experience is based on individual learning and sharing, and knowledge sharing is important for enhancing organizational capabilities, such as improving organizational processes and systems (Mirinalini & Nath17, 2000). Learning by Experience is defined as a transformation process by which individual knowledge is transferred to organizational knowledge. In other words, people within an organization, through the sharing of their thoughts, beliefs, knowledge, and experience, mutually develop a common understanding of themselves.and have a more accurate reaction and interpretation of it. An organization provides opportunities for employees to share their learning and new perspectives with others, because the process of sharing and sharing knowledge is the only way to sustain the Learning by Experience process (otherwise, without "knowledge sharing," there is only individual learning, not organizational learning) (Young18, 2010)Knowledge is an intangible asset in businesses and serves as one of the main sources of competence. Cultivating and acquiring knowledge is beneficial for innovation capability. A study that focused on Taiwan's bicycle industry and its collective innovation and technology process to investigate inter-organizational learning, learning platform, and learning knowledge shows that: 1) The learning platform includes information technology, special projects, and public activities, 2) The learning knowledge includes product knowledge, production knowledge, and management knowledge. 3) While learning knowledge emphasizes product production and management knowledge In order to effectively respond to the growing competitive challenges in the global market and to use appropriate methods that emphasize knowledge-based innovation, it is essential for businesses to have access to sufficient resources that enable them to respond correctly. in a holistic manner, thereby enabling businesses to start competing. However, the vision of business management should not focus solely on core internal competencies, for this purpose it is necessary to create a network based on inter-organizational cooperation so that they are both surrounded by more useful and available resources and are better able to respond to the crisis that has arisen in the Interaction and cooperation with others, respond (Tsai et al19., 2009)Crisis management is very important in large-scale crisis situations.In disaster situations, crisis management includes various operations such as transferring relief resources to requesting locations and organizations, providing first aid to people in crisis, and initiating recovery operations. Despite

the importance of this cooperation, the recent disasters (the tsunami in Japan, Hurricane Katrina) revealed an inefficient and unorganized organizational dynamic. Therefore, the intra-organizational and extra-organizational dynamics of relief organizations is a serious issue. In order to develop agile organizations in crisis situations, inter-organizational cooperation should be prioritized during the crisis (Lee et al20., 2012)In academic and academic researches in the literature review and research background section, among the research variables, the one that is more important and forms the focus of the literature is discussed at the beginning. Therefore, the present study has started with a detailed description of the phases of crisis management and the skills that organizational leaders should be aware of for crisis management in the organization. The continuation of the literature review section is guided by Learning by Experience in crisis management and the nature of the interaction between Learning by Experience and crisis and learning for crisis management is mentioned. The final part of the chapter, which is dedicated to the background of the research, in the section of domestic studies, a general conclusion has been made in the final section of domestic studies, and in the section of studies conducted abroad, for each of the studies, it has a conclusion and point of view regarding the study and its relationship with the research literature.

General Research Methodology

One of the characteristics of a scientific study that aims at finding the truth is the use of an appropriate research method, and the selection of the appropriate research method depends on the objectives, the nature of the research topic, and the executive facilities, and the purpose of the research is to have accurate and easy access to the answers to the research questions. Each research is unique according to the statistical population in which the research is conducted, the research method, and the tools used in the process of conducting the research. It is considered unique and distinctive. The research method is defined as a set of rules, tools, and reliable and systematic ways to investigate the facts, discover the unknowns, and reach solutions to problems. The research method and process guide the research and play a fundamental and pivotal role in its success. Adopting and applying the correct research method should be in accordance with the nature and characteristics of the research. It is well known that an inappropriate method and process leads to unrealistic conclusions.Considering that the present study is of a mixed type (quantitative and qualitative), therefore, the process of data collection and data analysis has been carried out in two phases: qualitative and quantitative.21 The researcher has adapted the phases expressed in the thematic analysis that have been explained by Brown and Clark (2006), and has analyzed the qualitative data in six phases.Statistical Population, Sampling Method and Sample Size in the Qualitative Phase According to the statistical population, it consisted of organizations and centers under the Isfahan Crisis Management Chamber, the snowball method was used. Interviews were conducted directly and in full coordination in the workplace of the participants. In this study, theoretical saturation was achieved by conducting (13) interviews. The information provided by the Isfahan Disaster Management General Headquarters (located in Isfahan Governorate) has mentioned the names of these organizations and also referred to them to collect information. After establishing a face-to-face contact with these organizations and raising the subject of the research, as well as having a license issued by the crisis management of Isfahan province, the researcher has conducted an interview if the relevant organization and its security department have allowed an interview with the crisis manager in that relevant organization. Otherwise, due to the rejection of the researcher's request and the lack of agreement for the interview, the interview was not possible.Sampling in the present study has been done by purposive selection method22 . The participants in the interview have been selected by a specific method and the main goal has been that the selected people can consider all aspects of organizational crisis as an expert or manager or person in charge of crisis management in the relevant organization. In the methods related to qualitative research, what is important in the topic of sampling is the relationship between sampling And it is theoretical saturation. In fact, when all categories have been identified and formed in terms of characteristics, dimensions, distinctions, and differences, it is when the researcher has reached theoretical saturation. After that, more and more information and more analysis will add small new things to the conceptualization, although the distinctions can always be discovered.In purposive sampling, researchers intentionally select people and places that can understand or learn the core concepts. In the following, in Table 3-1, the names of the organizations referred to as the desired places that include the members of the research samples in the qualitative phase are given. The number of people interviewed was 1 person from each organization. Of course, interviews have been conducted with 2 people at the Isfahan Crisis Management Headquarters.

Table 3-1: Data collection sites in the qualitative phase

Carrie's precedent	Number of interviewees	Organization Name	Row
14	2	Isfahan Crisis Management Headquarters	**1**
16			
12	1	Management and Planning Organization	**2**
8	1	Red Crescent	**3**
10	1	Isfahan Municipality	**4**
11	1	Isfahan Governorate	**5**
13	1	Isfahan Meteorology	**6**
15	1	Natural Resources and Watershed Management	**7**
10	1	Isfahan Fire Department	**8**
13	1	Gas Distribution Company	**9**
12	1	Water & Wastewater	**10**
16	1	Regional Electricity Distribution Company	**11**
13	1	Geology of Isfahan	**12**

Determining Validity in the Qualitative Phase

One of the procedures for determining credibility in a qualitative study is to describe the environment, participants, and themes of a qualitative study that are presented in full detail. Thick descriptions and descriptions**23** are in-depth, dense, and detailed. In contrast, low-key, diluted descriptions**24** lack detail and simply report the facts. The purpose of thick descriptions is to ensure the truthfulness or quality of reality**25**. to create propositions and phrases that give the reader the feeling that the events described in it have experienced or can be experienced. Therefore, credibility is created through the lens and perspective of readers who read a narrative. In order to use this method to build credibility, researchers must use structuralist approaches in order to be able to contextualize the people or places under study. The process of writing using thick descriptions involves providing as much detail as possible. This process may involve describing a small part of the interaction, experience, or action (action). It may involve specific people being placed in certain situations. It may involve making a live connection and interaction between two or more people. It may include a detailed description of how and how people feel. Through these vivid details, researchers help readers understand that what they encounter is valid. In addition, the rich description26 allows readers to make decisions about the application of the findings in other similar contexts.Considering that in the present study, the narratives and descriptions of the interviewees in the context of the crises they have faced in their own organization have been presented, and also considering that by studying and reading the descriptions, the reader can fully understand the feelings of the interviewee, so the validity of the findings is confirmed in the qualitative phase. On the other hand, at the time of interviewing the interviewees, although the researcher had the interview questions in hand and asked the questions, but due to the nature of the research that three consecutive phases of the crisis were examined, the narration of a crisis that occurred in the organization, helped the researcher to be able to distinguish the components related to these three phases (stages) well and increase the validity of the qualitative findings. Validity of Questionnaire In order to evaluate the content validity, the questionnaire was seen by five experts in the field of management, (one professor from Shahid Beheshti University and four professors from the University of Tehran) to evaluate the validity of its content qualitatively. After the content validity was confirmed qualitatively, in order to evaluate the content validity from a quantitative point of view, the relative content validity coefficient27 (CVR) and the content validity index28 (CVI) were used.) was used. Considering that the number of experts to monitor the content of the questionnaire was 10 people, according to the Laushe table, the 29minimum value of the relative validity coefficient of content should be 0.62. The results related to the relative validity coefficient of content and content validity index for the components of Learning by Experience are

presented in tables 1. Table 1: Content Validity Index and Content Relative Validity Coefficient Related to the Questionnaire Questions

0.8-1	Content Relative Validity Coefficient (CVR) Range for Each Question
10	Number of Specialists
28	Number of questions
0.8-0.9	Content Validity Index (CVI) range for each question

The general approach of the research in the quantitative phase

In the quantitative phase of the present study, according to the themes (main themes and sub-themes) extracted in the qualitative phase, a 28-item questionnaire was developed in order to measure and evaluate the initial research model. This questionnaire can be seen in Appendix No. 2 of the research. The general approach of the research in the quantitative phase is exploratory and as a result, to evaluate the initial model obtained from the qualitative part (which has been done in the quantitative part), Methods related to factor extraction have been used in exploratory factor analysis. It should be noted that in addition to the above, due to the fact that no structural relationship or hypothesis has been defined for the extracted factors in the model, confirmatory factor analysis has not been a suitable solution for evaluating the initial model, and the investigation of the initial model of the research has been done through exploratory factor analysis methods, specifically using the principal component analysis method and the parallel analysis method. Venice is a method for investigating the relationships between hidden variables that simultaneously considers observable variables. The method of structural equation modeling is that this method is not used to construct the model, but is used to evaluate and validate the model. In fact, the researcher should draw a preliminary model, then using this method, the statistical population refers to the whole group of people that the researcher wants to research. Its units should be studied. In this study, the statistical population of the quantitative section studied was the managers, supervisors and senior experts of selected crisis management organizations in Isfahan (255) people who have more information about this research topic. Of course, the reason for choosing this statistical population is the age, history, importance and mission of the organization. After preparing the questionnaire, the questionnaire was distributed among the qualified individuals by referring to the organizations mentioned in Table 1-3. At the request of the Isfahan Crisis Management Headquarters, located in Isfahan Governorate, the researcher was promised that the personal details of any of the participants in the research process (either in the qualitative or quantitative phases) would be published. A total of 153 questionnaires were distributed and 153 questionnaires were collected Is. After referring to 12 organizations in Isfahan that were members of the Isfahan Crisis Management Room, since it was not clear how many samples could be sufficient for exploratory factor analysis, therefore, after referring to the 12 organizations mentioned in Table 1-3 and collecting 141 questionnaires, the tests related to exploratory factor analysis were performed and due to the inadequacy of the sample size, among the mentioned organizations were referred to the crisis management department of the Isfahan Red Crescent, which was located in another place outside this organization, and 12 other questionnaires were distributed and collected, and by re-performing exploratory factor analysis tests, the adequacy of the sample in the quantitative section was confirmed $5q \leq n \leq 15q$The minimum value is (153) and the maximum is (255), so (153) people were considered as a sample to complete the questionnaire and the questionnaireswere distributed among them, completed and collected by them Statistical tests used in the quantitative part of the research According to the exploratory approach of the research, in the quantitative phase, exploratory factor analysis and statistical tests related to exploratory factor analysis have been used. Principal Component Analysis (PCA) test has been used for the indicators related to each component of organizational learning. The mentioned tests have been used using SPSS25 software have been done. It should be noted that the parallel analysis test30 has been performed using the Monte Carlo simulator program31 in order to be more reliable in extracting the factors (components) of those components that the results of exploratory analysis and thematic analysis have contradicted each other.The Kolmogorov-Smirnov test has been performed to investigate the results of normalization of the data. In addition, using the binomial test,32 which is a non-parametric alternative to the one-sample t-test33, the mean scores of the research variables in the crisis phases have been investigated. The structural equation modeling method is used to evaluate and validate the model.

4 Analysis of the findings Data analysis is a multi-stage process during which the data provided through the use of collection tools in the statistical sample are processed in order to make appropriate use of them in order to achieve the research goals. In this stage, the data are refined both conceptually and empirically, and statistical

techniques are also used. After determining the research method and collecting the data required for analysis, it is time to analyze and categorize the collected data using appropriate techniques that are compatible with the research method and the type of variables.The first source of data collection is interviews with 13 relevant people (manager, supervisor, employee) in the field of crisis management of organizations related to the Isfahan Management Crisis Room who have been working in 12 organizations. As mentioned in the third chapter, the interviews were conducted in a semi-structured manner. Data collection in the qualitative section continued until the researcher reached theoretical saturation. Interviews were conducted with people at their workplaces. The collected data were analyzed using the six-step method of Brown and Clark (2006). The analysis was performed during six phases. Using thematic analysis, which was mentioned in the third chapter, after taking notes and coding the data, the main themes and sub-themes within them were extracted.**Table 2: Extracted Themes Related to the Pre-Crisis Phase**

Sub-Theme	Main Theme	Row
Creating hypothetical images of future crises	Developing scenarios for possible crises	1
Analysis of the organization's strengths and weaknesses in the face of possible crises		
Perspective	Systems Thinking	2
Changing Isolated and Isolated Thinking to Dynamic Thinking		
Preparing an archive for documentation	Organizational memory	3
Drawing the future trajectory and updating it		
Adsorption capacity		
Knowledge sharing between organizations		
Adaptive Learning, Single-Loop Learning, Two-Loop Learning	Creating a Learning Organization	4
Learning from the Crisis		
Predicting the crisis	Preventing Organizational Neglect	5
Training to boost readiness		

Table3: Extracted Themes Related to the Crisis Phase

Sub-Theme	Main Theme	Row
Field Survey	Inter-Organizational Collaboration and Networking	1
Interact to collect data and create a database		
Exchange of information	Knowledge sharing between networks	2
Knowledge exchange		

Table 4: Extracted Themes Related to the Post-Crisis Phase

Sub-Theme	Main Theme	Row
Recording Organizational Stories and Narratives	Moving towards a learning organization with a storytelling approach	1
Learning from organizational narratives		
Transferring experiences face-to-face	Mentoring	2
Creating the necessary infrastructure for the direct transfer of experiences		
Providing the necessary platform for solving challenges through strategic thinking	Coaching	3
Developing a system of delegation of authority		

Presenting the Primary Research Model Using the Analysis of the Findings Related to the Qualitative Part
In this section, according to the results of the analysis of the findings, using the main and sub-themes, the initial model of the research is presented. It should be noted that the final model of the research will be presented after analyzing the findings of the qualitative and quantitative sections.

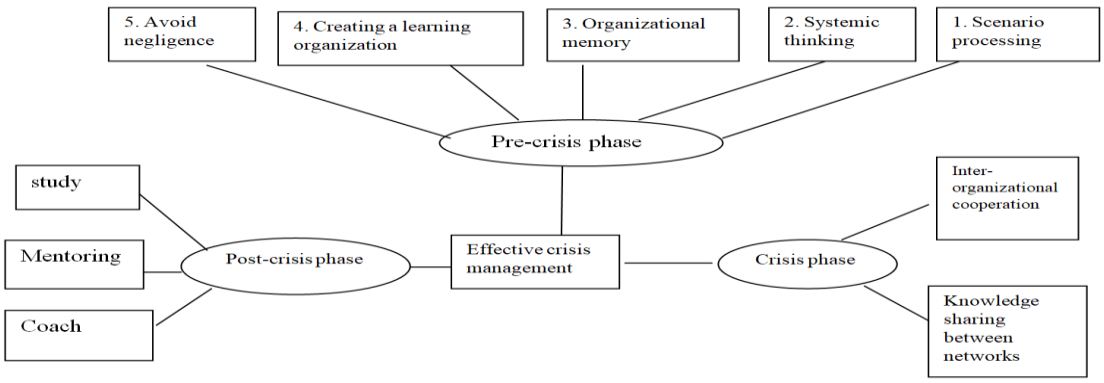

Figure 1: Preliminary research model

Evaluation of the reliability of the components explained in the qualitative and quantitative parts of the research The reliability of the components explained for each component of Learning by Experience in three phases of crisis (before, during, and after the crisis) was evaluated using Cronbach's alpha coefficient. This coefficient for each of the factors is given in Table 24-4. Cronbach's alpha coefficient for the components obtained from the qualitative analysis is at an acceptable level (Taber34, 2018). Cronbach's alpha coefficient after factor analysis for each of the final factors It is higher than the value of 0.7, which is at the optimal level (Taber, 2018). It should be noted that the test and measurement of construct validity for each of the structures was done using exploratory factor analysis, the results of which were presented in the previous sections. In addition, the content validity was also done using the collection of experts' opinions, the results of which were presented in the third chapter.**Table 5: Cronbach's alpha values for the components (factors) extracted from exploratory factor analysis**

Learning by Experience Component/Related Index in the Questionnaire	Component Name	Cronbach's alpha	Cronbach's Alpha Learning by Experience in the Related Phase
The pre-crisis phase (1-2-3-4-5)	Developing scenarios for possible crises	0.751	0.935
The pre-crisis phase (6-7-8)	Systems Thinking	0.700	
The pre-crisis phase (9-10)	Organizational memory	0.737	
The pre-crisis phase (11-12-13-14-15-16-17-18)	Creating a Learning Organization	0.889	
The pre-crisis phase (19-20)	Preventing Organizational Neglect	0.748	
Phase During Crisis (21-22)	Proper Networking	0.700	0.700
Post-crisis phase (23-24)	Moving towards a learning organization with a storytelling approach	0.807	0.856
Post-crisis phase (25-26-27-28)	Coaching & Mentoring	0.841	

Using exploratory factor analysis and related methods to explain the components related to Learning by Experience themes in the before, during, and post-crisis phasesIn this step, first, the suitability of the data for exploratory factor analysis is investigated using tests related to the suitability of the data for factor analysis. Then, the slope diagram for the indicators related to each block (scale) is presented. Then, using the results of principal component analysis and using the values related to rotation, for each phase to the eigenvalues, the percentage of explanation The variance and factor loads of the indices of each component are mentioned. It should be noted that exploratory factor analysis is used as a method for data discovery, and the interpretation and use of it depends on the researcher's opinion and is not influenced by solid statistical rules (Plant,[35] 2013). A total of 20 indicators related to the Learning Components Scale in the pre-crisis phase were tested for principal components (PCAs) using SPSS25 software . Before performing exploratory factor analysis, the suitability of the data for factor analysis was evaluated. If the Keyser-Meyer-Olkin value is higher than 0.5, the data can be used for exploratory factor analysis, although a KMO value higher than 0.8 is considered very appropriate (Keyser[36], 1974). The Keyser-Meyer-Oaklin value was 0.600 and as a result, the Bartlett spherical test was statistically significant, which confirms the factorability of the correlation matrix (Schaltz, Whitney, & Zikar[37], 2013). The results of this test are shown in the table 6 is visible.

Table 6: Rotated Factor Matrix for Learning Components in the Pre-Crisis Phase

			Factors (Components)		
Indicators (Questionnaire Questions)	1. Developing a scenario for possible crises	2. Systems Thinking	3. Organizational memory	4. Creating a Learning Organization	5. Preventing organizational neglect
1	0.610				
2	0.546				
3	0.841				
4	0.819				
5	0.910				
6		0.762			
7		0.930			
8		0.726			
9			0.726		
10			0.796		
11				0.633	
12				0.931	
13				0.550	
14				0.739	
15				0.902	
16				0.752	
17				0.704	
18				0.627	
19					0.888
20					0.727

Two indicators related to the Learning by Experience Scale in the Crisis Phase were tested for principal components (PCA) using SPSS25 software . Before performing exploratory factor analysis, the suitability of the data for factor analysis was evaluated. The value of Keyser-Meyer-Oaklin was 0.500, which is located at an acceptable level, and as a result, the Bartlett spherical test is statistically significant, and as a result, the factoriality of the case correlation matrix It will be approved. The results of this test can be seen in Table 7.

Table 7: Comparison of PCA Eigenvalues and Benchmark Values from PA Analysis

Number of Components	Eigenvalue related to principal component analysis	Benchmark value related to parallel analysis	Rejection/Acceptance

1	1.52	1.096	Admission
2	0.475	1.020	Reject

Table 8: Comparison of PCA Eigenvalues and Benchmark Values from PA Analysis

Number of Components	Eigenvalue related to principal component analysis	Benchmark value related to parallel analysis	Rejection/Acceptance
1	3.588	1.249	Admission
2	1.015	1.155	Reject
3	0.683	1.052	Reject
4	0.346	0.953	Reject
5	0.209	0.863	Reject
6	0.108	0.725	Reject

In this section, using inferential analysis of the findings and using statistical tests, more of the findings and answering the research questions are discussed. It should be noted that according to the results of the Kolmogorov-Smirnov test , and according to the significance level for all research variables, non-parametric statistical tests have been used. The significance level for all components (variables) is less than 0.05 Is. The results of the Kolmogorov-Smirnov test can be seen in Table 4-25.

Table 9: Results of the Kolmogorov-Smirnov Test

Significance level	Degree of Freedom	Variables
0.001	153	Developing scenarios for possible crises
0.001	153	Systems Thinking
0.001	153	Organizational memory
0.001	153	Learning Organization
0.001	153	Preventing Organizational Neglect
0.001	153	Proper Networking
0.001	153	Lessons learned
0.001	153	Coaching & Mentoring

Presenting the Final Model of Effective Learning by Experience for Crisis Management Based on Qualitative and Quantitative Analysis In this section, according to the results obtained from the qualitative and quantitative sections, the final research model for effective management of organizational crisis is presented in Figure 2 .

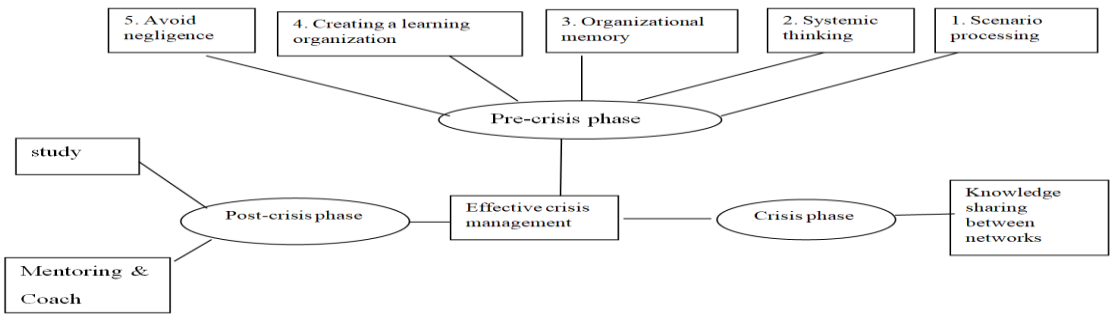

Figure 2: The final model of the research

5. Discussion, Conclusion

At the end of each research, the researcher explains and explains the results according to the goals he has pursued during the research process. Discussion and conclusion is one of the most important parts of any research, because all the results of the research are discussed in detail in this section. In this section, the researcher seeks to consider the results of the analysis of the findings and in this way, provide effective solutions and suggestions. The results are of particular importance, because they will serve as a basis for solving the existing problems, improving the current situation and moving towards a desirable situation. Correct conclusions and suggestions can be considered as solutions that are used to solve the problems of the organization. The present study has been conducted to design a model for effective crisis management in the organization through Learning by Experience within the scope of selected organizations in the crisis management room of Isfahan.After analyzing the findings of the qualitative section, according to the extracted themes, a questionnaire consisting of 28 indicators was developed that has been used to better determine and categorize the extracted themes and also to

determine the extent of the dominance of these indicators in the three phases of the crisis (before, during, and after the crisis). The research questionnaire was distributed among the subjects and tests related to exploratory factor analysis were performed on the data obtained from the questionnaires. The results of this section were compared with the results of the qualitative analysis section and finally the final model was presented. The results of the quantitative analysis and principal component analysis section led to refinement and revision of the extracted themes.The findings indicated that 20 indicators related to the components of Learning by Experience in the pre-crisis phase were able to explain 5 factors. As a result, the analysis of the findings of the qualitative part was consistent with the findings of the quantitative analysis. Two indicators related to the components of Learning by Experience in the crisis phase were able to explain 1 factor, and in addition, the results of parallel analysis confirmed this result. With a revision in explaining the factors of this phase, appropriate networking in the form of a theme was presented in the final model section. Six indicators related to the components of Learning by Experience in the post-crisis phase, based on the results of the quantitative section and the analysis of the main components, were able to explain two factors. In the qualitative phase, the results explained 3 factors (the main theme). As a result, after reviewing the results of the parallel analysis, it was decided that the indicators related to this phase would be presented in the form of 2 main themes in the final model section.The results of the binomial test (a non-parametric alternative to the one-sample t-test) which was conducted to investigate the level of governance of Learning by Experience components in crisis phases, showed that among the components of organizational learning, the scores for the systems thinking construct are less than average and for the constructs of developing scenarios for probable crises, organizational memory, creating a learning organization, preventing organizational neglect, and learning lessons are higher than average. For the two network constructsThere was no statistically significant difference between the scores of these two constructs and the average of these two constructs, and as a result, the scores of these two constructs were estimated to be at the average level. Also, based on the results of testing the research hypotheses, it can be concluded that all the relationships between different phases of crisis and crisis management have positive and significant effects.The pre-crisis phase has a strong and positive effect on the post-crisis phase (path coefficient of 0.89) and the post-crisis phase (path coefficient of 0.66), which shows that preparation and planning before the crisis plays an important role in reducing its effects and facilitating the management process in the later stages.Also, the pre-crisis phase has a positive impact on crisis management (path coefficient of 0.67), which confirms the importance of pre-emptive preparation and planning.The phase during the crisis also has a positive and significant effect on crisis management (path coefficient of 0.57), which indicates the necessity of effective measures and active management at the time of crisis.The post-crisis phase has a positive effect on crisis management (path coefficient of 0.65), which indicates that post-crisis assessment and revision can make meaningful improvements in the management of future crises.In general, these results show that all three phases play an important role in the crisis management process before, during, and after the crisis, and effective planning and actions in each of these phases can lead to the overall improvement of crisis management.The results of this study showed that in the post-crisis phase, moving towards a learning organization with a storytelling approach is considered as an important component in crisis management, and in the crisis phase, sharing experiences can be very important. In this regard, Smith (2005) has referred to the concept of learning from crisis. Others learn. This learning should help shape the precautionary norms that an organization has, thereby helping to build organizational resilience. Therefore, the findings of the present study are in line with the findings of Smith (2005). On the other hand, Simmons (2009) claims that if the organization applies the lessons learned from past crises or learns from the uncertainties created by crisis situations , or treats learning as an emerging concept whose history is an integral part of understanding, it can turn the crisis into a desirable opportunity. Therefore, the findings of the present study are the same as those of Simmons (2009) It is also compatible and aligned. Perhaps one of the reasons for the alignment of the results of the present study with the findings of the studies of Smith (2005) and Simmons (2009) is that precautionary norms and considering those norms, on the way to organizational resilience, can help to maintain the organization and ensure its survival in the time of sudden changes (which is also a change for organizations). On the other hand, although both success and failure lead to organizational learning, the knowledge gained from failure is depreciated or undervalued at a slower rate than the knowledge gained from success, and the development of organizational knowledge in response to failure is more likely to be embedded in organizational memory compared to the response to success. Because failure forces decision-makers to discover their knowledge gap and seek to reduce this gap. Reducing this gap means developing the formal knowledge of the organization to respond to changes, and this in itself emphasizes the concept of resilience.

Suggestions based on research findings According to the findings of the analysis of the present study, it is suggested that the leaders of the organization, managers, and those in charge of crisis management in organizations take action in the following directions

In the pre-crisis phase, the following suggestions can be considered:

**Since the results of the research indicate that performing exercises and training maneuvers is one of the pillars of promoting Learning by Experience in the pre-crisis phase, it is better for crisis management managers in the organization to take the following actions:

- Providing support and incentive mechanisms to train and improve the preparedness of the organization's people against the crisis in the selected organizations of the organization's crisis management room, so that people can have the necessary preparedness before the crisis occurs and manage it in an effective way.

It is necessary for crisis management operators in the selected organizations of the Isfahan Crisis Management Chamber, by combining the concepts of crisis management and the concepts of strategic planning, to take the necessary steps to develop an appropriate type of pre-planning for crisis management.

- The necessary organization should be done to use the capacity of organizational organizations and volunteer forces within the organization so that it can be done at the right time in order to provide equipment and requirements for crisis management.

**Since the results of the research show that Learning by Experience affects resilience and there is a two-way relationship between Learning by Experience and resilience, and promoting resilience helps in effective crisis management:

It is necessary for the leaders of the organization to take the necessary measures to increase organizational resilience and reduce the risk and negative effects of the crises that have occurred.

**Considering that the results of the research have shown that the sharing of knowledge and experiences affects effective crisis management, it is better that crisis management operators in organizations:

- Help to effectively manage the crisis by formulating appropriate policies and directions, followed by recognizing the current situation and benefiting from domestic experiences.

**Since the results of the research explain that having a systems thinking approach can play an effective role in Learning by Experience and effective crisis management, it is suggested that crisis management practitioners in organizations:

- Develop risk reduction programs, preparedness and response programs, as well as recovery and rehabilitation programs, and take effective measures in the field of effective crisis management.
- By reviewing the concepts of strategic planning, which consists of strategic planning models and strategic planning processes, they should take useful actions, especially in the pre-crisis phase.

**Since the results of the research indicate the creation of appropriate networking for effective crisis management in the crisis phase , it is suggested that crisis management operators in the organization:

- In order to reduce the risk, they should notify and send early warnings and perform basic and necessary services in order to clarify and manage logistical and financial affairs.
- Develop and regulate agreements and memoranda of inter-organizational cooperation and joint cooperation between the members of the Isfahan Crisis Management Chamber and formulate executive instructions related to this type of cooperation.
- Take the necessary measures to study the structure of crisis management in other societies and even other countries.
- In order to create databases related to risks and vulnerabilities and also to create coordination in the organization's behavior to make strong and integrated decisions in the organization.

**Since the results of the research explain the lessons learned from the knowledge and experiences created in the post-crisis phase , it is suggested that:

The members of the organization and various organizational units should take the necessary measures in order to record and record the knowledge derived from various experiences in the field of crisis management, especially in the stages of response and recovery (reconstruction).

- Organizations should take action in order to provide credit resources in preventive measures, especially in education and research, creating financial capacities and investment mechanisms of the private sectors alongside the public sectors, as well as creating human capacities related to specialized and scientific knowledge.

Organizations should take the necessary measures in order to improve the resilience and adaptation of the organization to the events that have occurred, benefit from training based on experiences and technology, as well as the results of futures studies (with a participatory approach).

Leaders and managers of public and private organizations should take the necessary steps to improve the governance system and develop capacities with an emphasis on systemic thinking and integrated and coordinated management.

- Promoting education and research, using new technologies and indigenous knowledge in order to realize an effective and forward-looking crisis management system.
- By taking advantage of the active and effective participation of people within the organization, they should promote social capital in crisis management and strengthen trust and solidarity.

6 . Resources:

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هوامش البحث

[1] Kotter et al.
[2] Organizational crisis management
[3] Pearson & Clair
[4] man-made
[5] Antonacopoulou et al.
[6] dynamic capabilities
[7] ambidexterity
[8] absorptive capacity
[9]Birkinshaw et al.
[10] Ellis & Davidi
[11] service timeliness
[12] Argote et al.

[13] Zhou et al.
[14] Mano
[15] Lu et al.
[16] Asci et al.
[17] Mrinalini & Nath
[18] Yang
[19] Tsai et al.
[20] Lee et al.
[21] . Braun & Clark
[22] . Purposive
[23] thick descriptions
[24] Thin descriptions
[25] verisimilitude
[26] Rich description
[27] Content Validity Ratio
[28] Content Validity Index
[29] Lawshe
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[31] . Mont Carlo
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[33] One-Sample T Test
[34] . Taber
[35] . Pallant
[36] Kaiser
[37] . Shultz, Whitney & Zickar