

## EVENTS MANAGEMENT IN SERVICE ORGANIZATIONS APPROACHING HIGH RELIABILITY ORGANIZATIONS

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**Abstract:** This paper aims to find new methods in managing events using the characteristics of high reliability organizations such as airline companies, nuclear power plants and controlling aero traffic in service organizations. Existing characteristics in high reliability organizations are first proposed in this research then required activities for implanting the characteristics of a high reliability organization are inferred in electricity companies as a service organization. The tools of collecting data were questionnaires and they were conducted through surveying in statistical population of senior managers of Iran's electricity distribution companies and interviewing the elites of these companies. The methodology is descriptive exploratory and in terms of goal, it is applied research.

**Keywords:** events, service organization, electricity Distribution Company, high reliability organization

### 1. Introduction

Simultaneously with technological and social developments and following that equipping organizations with complicated technologies, complicated organizations have been created as a complicated system. Based on the theories of complicated systems, any system which is complicated and its components are tightly coupled to each other, will face events in normal flow of its operation. It is resulted by lack of control and perceiving processes which happen. In another word it is derived from uncontrollability and unpredictability of these events in complicated systems (Perrow, 1984). To prevent events and cope with them in case of emerging, different theories have been proposed. One of them is the theory of high reliability organization (HRO). This paper aims to use mentioned characteristics and methods in service organizations such as the companies of distributing electricity, water, gas and telephone. The case study of this paper includes electricity distribution companies as a public and large extent service company that is responsible for distributing electrical energy all around the country among electricity consumers and in order to achieve high reliability in the performance of these companies. To simplify high reliability organization in this research, it is mentioned as HRO.

#### 1.1 The concepts and theories

There are two theories for coping with events in the field of organizations that work with high risk technologies: 1- normal events theory, 2- high reliability theory (Wieck, 1999). Normal events theory is based in the attempt of Charles Perrow in 1984 to interpret his perception from Three Mile Island disaster in a more complete formula. Perrow argued that each system whose components are coupled to each other tightly and complicated interaction ally, will have exactly events in normal flow of operations. Perrow's argument is based on three principles; first is that people make mistake, even in nuclear power plants, second is that big events almost always start from very small events, third is that many errors are arisen from organizations more than technology. These three principles are still appropriate up to now (Perrow, 1984). The second theory is high reliability. This theory belongs to organizations which have complicated technology and work in stressful environments so that there will be disaster for them in case of events (Roberts, 1990). If the performance of organization can be shown with reliability, it will

be high reliability organization (Ericksen and Dyer, 2004). The samples of these organizations include nuclear power plants, the centers of controlling aero traffic and aircraft carriers. According to the theory of HRO, the characteristics and methods which are used in these organizations can be utilized to cope with unexpected events in other organizations (Wieck, 1999).

#### 1.2 Events management

Anything which leads to interrupt giving services to the customers of service organizations is called events. These events can be resulted by equipment improper function, human error or natural disasters such as earthquake and flood. Events management includes the activities which are used to prevent control and reduce the events in such organizations.

#### 1.3 Reliability

Reliability of a system is the possibility of safe and faultless operation for specific time according to the current and predetermined conditions. Reliability is usually used for ensuring the proper functioning of a piece or generally a set of factors (system) during specific time and period (Faqih et al., 2007).

#### 1.4 The events and reliability in electricity distribution companies

Electricity distribution companies are responsible for distributing electrical energy to almost 30 million of consumers including domestic, business, public, industrial and agricultural consumers all around Iran. This operation duty includes maintaining and repairing electricity networks, selling energy, getting consumed cost and accepting new recruits of electricity. Any kind of event which interfere in this operation or duty and it is also unexpected is called events. In this paper, the events are only considered that are created for the networks of electricity distribution and lead to electricity interruption. The indexes of reliability in these companies will be measured according to standard number 1366-1998 of IEEE that is the reference for developing electricity standards. These indexes include:

- 1-System average interruption frequency index (SAIFI): this index shows that how many electricity interruptions have been averagely experienced by an electricity consumer within reporting period. Whatever the value of this index is higher, it indicates that the network is weak reliable and the interruption number of this system consumers is more.
- 2-System average interruption duration index (SAIDI): this index shows average duration that each study consumer doesn't have access to electrical energy. Whatever this index is lower, it shows higher reliability of network in terms of blackout duration for each electricity consumer.
- 3-Customer average interruption duration index (CAIDI): this index shows average required time for subscribers' service recovery and the difference between this index and first one is that instead of all consumers, only consumers who have had one experience of blackout will be considered in this index.
- 4-Average service availability index (ASAI): this index shows reliability from the perspective of blackout, as this index is closer to one, the reliability will be higher in study network.
- 5-Customers experiencing multiple interruptions (CEMIN): this index shows the number of consumers that have had more than n times of blackout out of whole consumers. Whatever this index is lower, it shows higher reliability in study network.

#### 1.5 High reliability organization (HRO)

HROs are some types of organizations that are designed in order to cope with complicated environments. The processes which can be found in HROs either provide the possibility of reliability performance or the possibility of adaptive learning (Holman,

2005). These organizations work in a social, political environment without overlooking, a rich environment of potential for error and mistake, the place where a scale of consequences prevents learning through experience and use complicated technology to avoid failure in their complicated processes (Rochlin, 1993). Primary characteristics of HROs are concentrated on complete elimination of error and mistake and lack of trial and error in learning (Wieck, 1987). The characteristics below are mentioned for HROs by Social theorists: (Sutcliffe, 2011)

- 1-Preoccupation with failure
- 2-Reluctance to simplify interpretations
- 3-Sensitivity to operations
- 4-Commitment to resilience
- 5-Deference to expertise

These five characteristics cause that organization has a permanent awareness for coping with events. This awareness is called mindfulness. Mindfulness is the process of active attention to new things, conducting this put people in present time and

make them sensitive to the context and perspective (Langer, 1989). Work mindfulness is related to interpreting weak signs in organization (Vaughan, 1986). This means that mindful organization feels even weak signs of error in performance of some sections in organization and react to them because it is believed that in organizations which use complicated technology, organization units are severely attached to each other or in another word are coupled to each other and error in one section of organizations will be rapidly transmitted to other units and a small error will turn to bigger ones cascading and leads to events, this is the feature of high technology organizations (Perrow, 1984). Ultimately the five mentioned characteristics in HROs cause organizations' mindfulness and through this mindfulness, the organization will be capable of discovering and predicting unexpected events and finally coping with them. These hierarchy of activities increases operation reliability and creates a high reliability organization. Generally, it can be said that high reliability organizations aren't capable of being without errors, but such organizations will have this capability that created errors cannot disable them. The figure below shows this process which is intellectual infrastructure of high reliability.

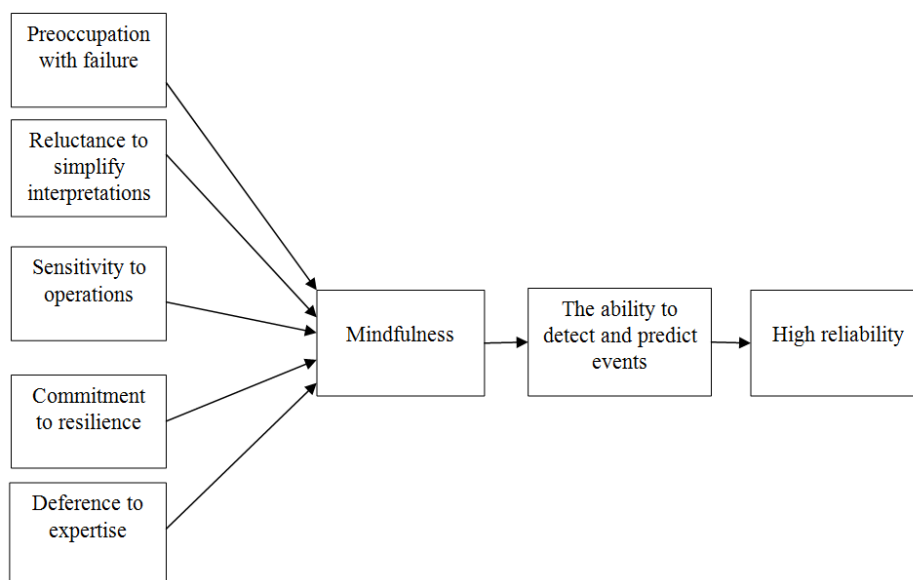


Figure 1- intellectual infrastructures for high reliability (Wieck, 1999)

### 1.6 General characteristics of HROs

#### 1-Preoccupation with failure:

In most of organizations when organization succeeds in its performance, its managers usually attribute this success to themselves or at least their organization instead of chance. The confident of organization members to their abilities, managers' skills and existing programs and methods of organization will be more. They trust this method. Assuming that success shows their ability, people get floated in their self-satisfaction, ignorance and habits that this pattern often leads to neglecting the mistakes and weaknesses or organization and consequently increases the possibility of human error. In very effective HROs, self-satisfaction is severely avoided, it is assumed that each current success decreases the possibility of future success (Wieck, 1999). The success isn't noticed in such these organizations but the thing which is paid attention is failure in the operation of organization. What factors lead to failure? Investigating failure in previous operations and failure in similar organizations are the factors that are most noticed in HROs. In another word the preoccupation of these organizations is failure in operation not success. The failures are rare events in such organizations because failure in them will be defined as disaster. Dealing with each one of errors will be conducted as some holes in the health

of system and the beginning of future failures so effective HROs either encourage reporting errors or they have the best use of each error which is reported.

#### 2-Reluctance to simplify interpretations:

Most of organizations simplify complicated duties that is when a sign of error is observed in system, one specific person or section of organization will be responsible to solve it and the rest of organization have nothing to do with it while simplifications are potentially dangerous for HROs because they limit either cautious actions of people or the number of unexpected consequences that they predict. Simplification increases the possibility of probable surprise. Whatever the organization is more accurate and neglect fewer data, it will be surprised less. Traditional organizations tend to overlook this question that what they have overlooked (Pearson and Mitroff, 1992). While effective HROs notice this question and investigate more about what they don't know. To avoid simplification deception, HROs promote complicity and assume that a complicated system should exist for feeling a complicated context and they believe that all human make mistakes and sceptics improve the reliability (Wieck, 1999).

### 3-Sensitivity to operations:

Operational personnel who are at the forefront of operations are specifically noticed in HROs, their comments are continuously taken. The managers of this organization focus on forefront (the place where working is really conducted) (Wieck, 2003). It is believed in these HROs that people are operational that in order to run the programs do all improvising works, handling and heaving (Wieck, 2003). Therefore, these people have to be aware of all organization operations and its levels. In another word big picture of organization operation should exist in the mind of operational personnel. This awareness is because in case of observing error whatever small in one section of organization, its effect should be perceived in whole organization and error transmission to other sections and their accumulation that is the feature of complicated organizations should be avoided and ultimately those errors should be modified. Another problem is lack of complete trust to technology that is done to prevent what is called automation surprise (Miller and Woods, 1997). Whatever developed, technology cannot be replace human and in the path of operations, the works shouldn't be done all by systems without continues monitoring.

### 4-Commitment to resilience:

The word resilience is often used for returning to the past (Dadashpur and Adeli, 2015). This word is more used in HROs because they don't have any other choices except real time response to the events. Effective HROs tend to have either anticipation or flexibility (Wildavsky, 1991). Anticipation refers to prediction and prevention potential dangers before having a damage while flexibility refers to the capacity of coping with unexpected dangers after they were revealed and learning for returning to the initial status. Unlike effective HROs, traditional organizations hardly tend to go toward one or both. Traditional organizations usually go toward predicting expected events, risk aversion, planned defend against predictable dangers while HROs show more attention to unpredictable dangers. Not only returning to initial statuses before errors but also flexibility is coping with events in the moment. The best HROs don't wait for error to deal with before response, instead they get prepared for possible surprise by expanding public knowledge and technical facilities, general order on resources (Wildavsky, 1991). It is obvious that HROs accept unavailability of errors. The knowledge of HROs consists of the reality of human error, doubtful technology and limited expertise (Vaughan, 1996). To cope with this reality, they either notice error prevention or error inhibition (Wieck, 2003). Ultimately flexibility comes as doubt on the applicability of past action, that is an action which used to be answered in the past might not always answer. Unlike many other organizations, HROs are able to either believe or doubt in past action simultaneously (Wieck, 1969).

### 5-Deference to expertise:

Effective HROs don't usually have any failure not because of existing discipline in their organization but because of their indiscipline that is official hierarchy isn't always effective in decision making but sometimes lack of particular hierarchy when moment decision making is required is useful in making a correct decision. In another word, each disciplined hierarchy can strengthen the errors especially when they occur near peak (Turner, 1978).

In case of delaying in decision making, smaller errors will be more likely to expand, accumulate and interact and start serious consequences. To cope such conditions, HROs obtain flexibility by organized anarchy (Rasmussen and Batstone, 1989). This indiscipline and ditching hierarchy introduces a kind of decision making that is known in management science as garbage can. Severe environmental changes cause that organizations move toward the structure of garbage can (Cohen and March, 1972). The problems, solutions, decision makers and opportunity selection in a garbage can depend on current flows inside system. It means that making decision isn't predicted but it is immediate.

Making decision here will be given to trained and experienced people instead of managers, the solutions are linked to the problems and decision makers are linked to selections that is by their common presence on that very moment (March and Olsen 1986). Of course this indiscipline isn't predicted only for critical situations but it is also valid for other times of organizational structure and this anarchy of organizational structure will be facilitated by the loosening of hierarchy restrictions using organizational mindful system in HROs (Wieck, 1999). Finally, in the event of unexpected circumstances in HROs, decision making of a person who is experienced and knowledgeable in the emerged subject is superior to making decision of a person who lacks this expertise although he has lower position organizationally.

## 2. Research history

Wieck, Sutcliff and Ostafold (1999) discussed the concept of high reliability organization (HRO) in order to have attitude to the organization's efficiency under erosive conditions as well as anarchy conditions, uncertainty and high risk and accompanied it with the theory of high reliability (Wieck, 1999). HROs theory has been used up to now in many service organizations to increase reliability in the performance such as firefighting organization (Anderson, 2013) and health services organization of America government (Vogus and Sutcliff, 2007) and Education Department of America (Reynolds and Stringfield, 2006) and Energy Department of America (B &W Pantex 200) and Urban Railway Organization in the UK (Bigley and Roberts, 2001).

In his research named "the theory of high reliability organization as an entry for operation risk management in project management", Werner (2012) uses the concept of team and education while using the HROs theory for managing operational risk projects (Werner, 2012).

Frankel et al (2006) in investigation of high reliability in medical and health care organizations, have identified the main tools of achieving high reliability as fairness and justice-oriented culture, team behavior and leadership employment (leadership informal communication with components of the organization) (Frankel et al, 2006). To achieve high reliability, the organizations have to make relationship among these three concepts. Common required activities to achieve high reliability in these organizations included team work, job rotation, permanent training, knowledge management, creating trust and talent management. These researches have shown that using the characteristics of HROs in mentioned service organizations in related performances, high reliability can be achieved. Considering research history, 16 activities which are used in HROs are identified that include the ability of high interaction, high transmission speed, high learning ability, calmness, job rotation, knowledge management, learning, security, trust, teamwork, talent management, organized anarchy, experience survival, loyalty, work hardness and the dignity of human resources. These activities can meet the characteristics of HRO.

- 1- Learning ability means educability and having string mind for learning in organization personnel.
- 2- High transmission speed is required characteristic for rapid decision making while events occur.
- 3- Calmness after decision making which is necessary for decision making and its stability.
- 4- The ability of high interaction with others and the skill of working with each other are required for the employees in HRO.
- 5- Job rotation or displacement in different jobs of organization is required for acquiring multi skills.
- 6- Knowledge management includes production, distribution and sharing knowledge in organization.
- 7- Organizational learning includes initial and while working training continuously.
- 8- Security for sending the reports of errors and mistakes for employees and no punishment even in case of their failure.

- 9- Team work is as coordination and the work of specific people with each other for particular subjects.  
 10- Talent management means discovering, growing and encouraging people who are talented in management fields.  
 11- Organized anarchy means in case of emerging crisis, decision making is on elites not organizational hierarchy.  
 12- Trust means that each person in organization is able to ensure the other one doesn't work to his detriment.  
 13- Experience survival means people who leave organization, transmit their experience to others.  
 14- Loyalty means after retirement, organization refer to employees and help them.

- 15- Work hardness means early completion of work in organization or early retirement from the organization in case of personnel's request  
 16- The dignity of employees who have left the organization means glorifying honoring them and providing them relative rights and benefits

Considering obtained activities above from research literature, model below is proposed by research to provide the characteristics of high reliability organization:

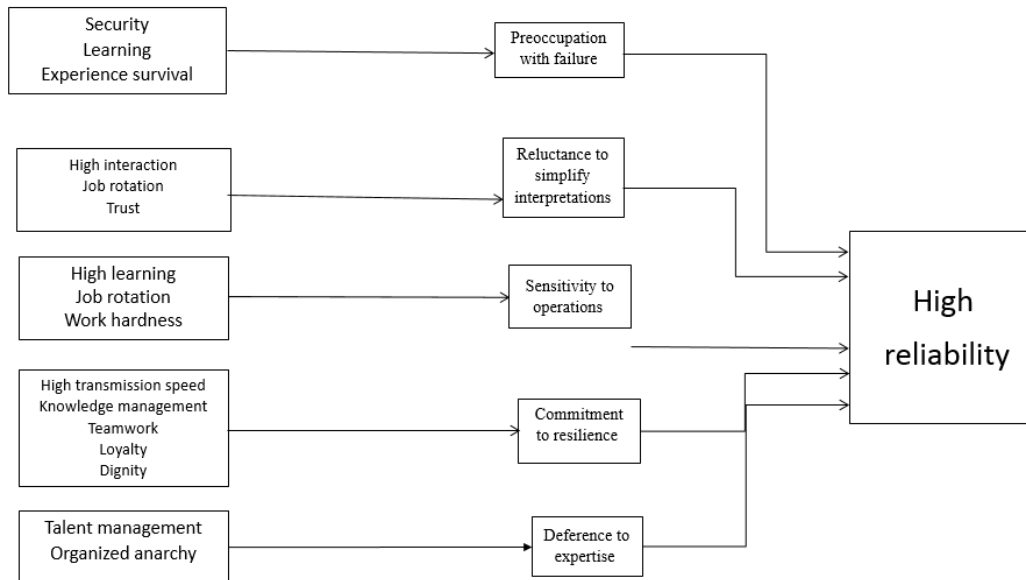


Figure 2- research conceptual model (reference: authors' findings)

## 2.1 Research questions

- 1-What are related activities to preoccupation with failure in service companies?
- 2-What are related activities to reluctance to simplify interpretations in service companies?
- 3-What are related activities to sensitivity to operation in service companies?
- 4-What are related activities to commitment to resilience in service companies?
- 5-What are related activities to deference to expertise in service companies?

## 3. Methodology

The methodology which is used in current research is discovery explanatory and in terms of goal the research is applied and in terms of collecting data it is survey.

### 3.1 Statistical population and sampling method

Statistical population of this research includes the managers and assistants of Iran electricity distribution companies that are under the Ministry of Energy. These companies are responsible to distribute electrical energy all around the country and form statistical population of the research. 40 companies of electricity distribution work in the country. Whole statistical population includes 300 people. To select the sample out of these people, Cochran's formula was used and 178 people were obtained as sample number, selection method was also simple random.

### 3.2 The tools of collecting data

Collecting data tools in this research consist of questionnaire and interviewing the elites. The questionnaire was provided and

distributed among them by the researcher to take the ideas of statistical samples which included the managers and assistants of Iran electricity distribution companies. Spectrum used in the questionnaire was Likert 5-item and consists of very high, high, average, low and very low. To investigate obtained result from questionnaire, the elites of electricity industry elites who had expert jobs and work experience upper than 10 years and management organizational position were interviewed through snowball method.

### 3.3 Validity and reliability of the research

To provide the validity of questionnaire, the ideas of elites and guiding professors as well as consulting ones were continuously used and necessary modifications were applied in the questions of questionnaire. In order to determine the reliability of questionnaire, Cronbach's alpha coefficient has been used. Calculated Cronbach's alpha coefficient is 0.72 which shows appropriate reliability of questionnaires' questions.

### 3.4 Analyzing data

To analyze data in this research, inferential statistics have been used. Due to this, SPSS software which is strong software in analyzing statistical data was utilized. In first level after collecting statistical samples, normal distribution of statistical population was first tested using Kolmogorov and Smirnov test and after ensuring the normalization of population, T-test was selected to experiment generalizing the results of sample volume to statistical population.

#### 4. Research findings

To ensure normalization of statistical population data, Kolmogorov and Smirnov test was used that obtained results are proposed in table below:

##### 4.1 Data normal distribution test and statistical test

Table 1- obtained results of Kolmogorov and Smirnov test for research variables

Result	Significance level	Z statistics	Standard deviation	Mean	Number
Normalization approval	0.057	1.334	0.65	2.898	176

After ensuring normal distribution of statistical population, t-test was used for generalizing obtained results of sample volume to used statistical population. Single sample t-test is one of the most functional statistical tests in investigating the attitude of one group about a subject or investigating a variable adjective in a particular group. In this research, the attitudes of 176 managers and assistants of Iran electricity distribution have been measured as sample about the existence of related activities to high reliability organizations in these companies through questionnaires. It means that according to the model, there are 16 activities in HRO to provide its characteristics. The research seeks to know to what extent of these activities in study organization which is Iran electricity distribution, use these activities so in order to this, questionnaire was sent and completing it was asked from manager and assistants of each Iran electricity company that are the most aware people in the field of administrating the company. In this questionnaire each respondent has answered to Likert 5-item scale including very

high, high, average, low and very low. It is now investigated if obtained answers from sample work in statistical population. The mean of statistical sample was calculated and it was 2.89. Therefore, it is claimed that population mean is 2.89 so the hypothesis is stated as below:

$$H_0: \mu \neq 2.89$$

$$H_1: \mu / = 2.89$$

Now considering the hypothesis, if the absolute value from obtained t is bigger than  $t_{0.05}$  that is 1.65 then  $H_0$  is rejected and claim is accepted. In another word the components are remained and the components whose obtained t value is smaller than critical value  $t_{0.05}$  that is 1.65 will be eliminated. The calculations have been done by software, the results have been shown in table below.

Table 2- the results of single sample t-test

Activities	Test value: 2.89			
	t	Sig. (2-tailed)	$t_{0.05}=1.65$	Result
High interaction ability	2.986	.003	$t > t_{0.05}$	Accepting claim
High transmission speed	3.520	.001	$t > t_{0.05}$	Accepting claim
High calmness	6.234	.000	$t > t_{0.05}$	Accepting claim
High learning ability	10.935	.000	$t > t_{0.05}$	Accepting claim
Job rotation	1.296	.197	$t < t_{0.05}$	Claim is rejected
Knowledge management	.132	.895	$t < t_{0.05}$	Claim is rejected
Learning	-3.962	.000	$t > t_{0.05}$	Accepting claim
Security	2.456	.015	$t > t_{0.05}$	Accepting claim
Trust	1.566	.119	$t < t_{0.05}$	Claim is rejected
Teamwork	-4.385	.000	$t > t_{0.05}$	Accepting claim
Talent management	2.593	.010	$t > t_{0.05}$	Accepting claim
Organized anarchy	-2.990	.003	$t > t_{0.05}$	Accepting claim
Experience survival	-9.001	.000	$t > t_{0.05}$	Accepting claim
Loyalty	-6.871	.000	$t > t_{0.05}$	Accepting claim
Work hardness	-1.532	.127	$t < t_{0.05}$	Claim is rejected
Dignity	-5.626	.000	$t > t_{0.05}$	Accepting claim

##### 4.2 The results of statistical test

T statistical test gives the results below:

- 1- High learning ability which is one of prominent feature of attracted human resources in HRO is noticed in Iran electricity companies during recruitment.
- 2- High transmission speed that is required characteristic of rapid decision making when crises occur is notices in Iran electricity companies during recruitment.
- 3- Calmness after decision making that is derived from trusting God is necessary in decision making and its stability is noticed during recruitment.
- 4- The ability of high interaction with others that is required for employees of HRO especially managers is the factor of selection in such organizations during recruitment.
- 5- Job rotation which is required due to acquire multiple skills in maintaining and promoting human resources doesn't exist adequately in electricity companies.

6- Knowledge management that is production, distribution and sharing knowledge in organization isn't noticed in maintaining and promoting human resources in electricity companies.

7- There is organizational learning in electricity companies as maintaining and promoting human resources activity.

8- There is security for sending error reports for the employees of HROs and they are encouraged in the activities of human resources.

9- Teamwork is conducted and encouraged as an activity of human resources.

10- Talent management which means discovering, training and encouraging people who are specifically talented in management field, is followed in electricity companies.

11- Organized anarchy that is decision making is on elites while crisis occur not on organizational chart can be found in electricity companies.

12- There isn't trust adequately among the members of electricity companies for exchanging information and intra-organizational interaction.

13- Experience survival means people who leave organization should keep their experience inside organizations through different methods and transmit it to other colleagues.

14- Loyalty means after retirement of people are referred by organization in case of need and are helped by organization.

15- Work hardiness which means early completion of work in electricity companies or early retirement cannot be found in the organization.

16- The dignity of retired employees while leaving the organization is respected through appreciating them and providing their relative rights and advantages.

From 16 activities of research model, the component of job rotation, knowledge management, trust and work hardiness don't exist in statistical population that is in Iran electricity companies, these activities aren't conducted while in a high reliability organization, these components have to be present. In this stage, now it has to be investigated if this shortage derived from negligence or lack or needing these activities in companies so the subject was followed during interviewing 10 elites of electricity industry. The question is that if the existence of knowledge management, trust, job rotation and work hardiness is necessary in electricity companies. Should companies implement these activities or considering their mission, there is no need for these activities. The ideas of ten elites and involved people in human resources in electricity companies are as follows:

1- To have high reliability performance, electricity companies should consider trust, job rotation, knowledge management and work hardiness in their employees' retirement.

2- The necessity of existence of trust, job rotation, knowledge management and work hardiness of employees while leaving organization is clear and can be found in some companies but it isn't followed in all companies.

3- Pioneer electricity companies consider trust, job rotation, knowledge management and work hardiness of employees but these activities aren't done in all companies.

4- Considering increasing expectations of people from electricity companies and to provide these expectations, there should be trust, job rotation, knowledge management and work hardiness in electricity companies.

5- The existence of trust among employees, job rotation, knowledge management and work hardiness of employees while retirement is required due to high reliability performance.

6- Job rotation and trust are necessary among the employees but knowledge management and work hardiness aren't necessary while retirement for high reliability performance.

7- In order to achieve high reliability, acquiring multiple skills with job rotation and trust among employees and work hardiness of employees is necessary but knowledge management isn't that much necessary.

8- Job rotation, knowledge management, trust among employees and work hardiness while retirement is necessary to achieve high reliability.

9- Job rotation, knowledge management, trust have been notified in electricity companies but because of some problems, they have not been executed and work hardiness is also followed by Power Ministry.

10- Trust among employees, job rotation, knowledge management and work hardiness of employees are necessary for achieving high reliability and lack of them hurt the performance.

Through the results of interviewing the elites, it can be concluded that according to them, the existence of job rotation, knowledge management, trust among employees and work hardiness of employees while retirement is necessary to have high reliability performance and lack of them in some of electricity companies is because of managers' ignorance especially those who are the managers of human resources in these companies. Due to several reasons such as cultural differences among people that manifest in the level of people expectation from electricity companies and financial abilities of companies that limit doing human resources management activities as well as insurance limitation which is derived from legal problems in the country have caused these activities not be implemented in some

companies. Considering the information above and obtained results of field investigating and conducted interviews, mentioned activities are necessary for a high reliability organization.

#### 4.3 The relationships of activities with characteristics of high reliability organizations

a) The activities of security, learning and experience survival are necessary for providing the characteristic of preoccupation with failure for HROs. The personnel of electricity distribution companies should be able to report the errors and problems of organization even if they made those mistakes. Without being worried about the consequences of reporting errors and mistakes, people should report them to related centers. In HROs, the employees aren't blamed for their reports but they are also encouraged (Vaughan, 1996). These reports are used as much as possible to prevent turning them to bigger problems. Unexpected events are because of a chain of errors that had been hidden and suddenly caused events as cascade in electricity networks. If people report these errors on that point of production, mentioned chain won't be formed or at least it can be controlled. The thing which is important in electricity companies and increases reliability is preventing occurrence of events in network and blackout, if this important issue is preoccupation of personnel in these companies (preoccupation with failure), they will be always worried about events and seriously investigate the smallest sign of events and try to prevent it. This is organizational mindfulness that is one of characteristics on HROs, another necessary activity is learning. Here learning is using others' experiences to modify current behaviors in order to prevent repeating mistakes. Continuous trainings and effectiveness evaluation of these trainings, visiting and face to face negotiations with similar companies that had the experience of failure and analyzing the reasons of these failures and the occurrence of crises increase learning. Simulating events and creating controlled crises and comparing with crisis through implementing operational maneuvers as well as maintaining people organizational experiences while leaving the organization for example while retirement through different methods such as holding class and seminar or writing the leaflets and books so that these experiences are kept in organization in another word experience survival are of conditions of providing preoccupation with failure of organization as the first characteristic of HROs.

b) The activities of high interaction ability, job rotation and trust are required for providing reluctance to simplify interpretations in HRO. In electricity distribution companies, the belief which indicates that working in complicated organization and complicated environment is important. This belief especially should turn to faith for managers. In each electricity distribution company there are some errors and problems while exploitation that lead to blackout, if each one of these blackouts is considered as a failure in current operation, this failure will have reason or some reasons. If this failure is dealt vaguely or another person or unit is blamed for that (simplifying in interpretation) the possibility of events repetition will be more. While when for investigating and analyzing each events regardless the importance of that, all units of company try to solve the problem and prevent repeated blackout that of course the interaction among these people is necessary for it or in another word if all data even apparently less important aren't ignored, then there won't be simplification. The personnel of the company need to be trained for negotiation technique. This means negotiation and interaction of people with each other and using the abilities of each other to be able to create synergy. To achieve this ability, the existence of trust among employees as well as between employees and managers is necessary, here the person should be sure that other one doesn't do anything to his detriment (Holman, 2005). Without trust, people won't share their knowledge with each other. Job rotation can be effective in trust and mutual perception among the units of organization because being in different jobs and familiarizing with problems and hardiness of each job will increase its employees' perception. Ultimately if this belief is created that failures and problems

aren't because of one person or unit but a chain of people or involved units and to solve it whole organization should be involved and use whole its power, then the company has provided reluctance to simplify interpretations that is second characteristic of an HRO.

c) The activities of high learning ability, job rotation and work hardiness are required for sensitivity to operations in HR, each one of the employees in electricity companies should be relatively aware of whole purchase, distribution and sale electricity operations that is they should be able to create a mental image of complete operation of electricity company because if they saw a problem or error in a part of company's current operation, they would be able to perceive the effect of this error or mistake in whole operation of the company. To achieve this recognition electricity company needs to have job rotation. Displacement and using organization personnel in different jobs create this cognitive ability for them to be aware of whole organization operation. For example, the personnel of engineering and designing section should be also used in exploitation sections and vice versa. Even the personnel of official units and customer service should work in exploitation section for a while and be trained. This perception of all organization operations is effective on increasing the attempt motivation for modifying or handling created problem. On the other hand, the managers of companies should believe that main activity of company is conducted by operational workforce and they are directly faced to the problems and work hardiness and they are the most important resources of company and their ideas should be considered in administrating a company. When these workforces felt tired or found problem in facing work pressure, their request for their displacement should be agreed and in retirement they should be also retired sooner than usual. Particular attention of managers to operational workforces and providing their needs are necessary for sensitivity to operations which is third characteristic of HRO.

d) High transmission speed, knowledge management, teamwork, loyalty and dignity are required for providing commitment to resilience. People expect electricity companies when there is a blackout, it is immediately solved and the conditions get normal again. This is a right expectation because main owners of the company are people. To provide this expectation, electricity companies should conduct two activities; first predict the events and before occurring be prepared to cope with it. The necessity of this preparedness is continues visits from network and identifying its weaknesses. Second is that when an events occurred, whole company would be able to return the conditions to the normal status. This ability can be achieved through using people who are fast in making decisions, teamwork and cooperation of people to solve problem is another necessary point for returning to initial status. In wide events such as earthquake and flood that damage is high and long blackouts are expected, using the experiences of experienced people even those who had left the company is required. The conditions should be so that people outside the company like experienced retired ones can refer to organization in case of need, that is they should be loyal to the organization and retirement shouldn't be permanent separation of these people from organization that of course it will be through appreciating and respecting these people. If people who have left the company aren't satisfied with their situation, they won't cooperate their organization again. Collecting the experiences of employed people in organization and those who are retired in critical conditions and events is a kind of organizational knowledge that can be effective in returning to previous situations. Fourth characteristic of HRO which is commitment to resilience will be provided in this way.

e) Talent management and organized anarchy as well as calmness while making decision are required for providing the characteristic of deference to expertise in HRO. When events occur in electricity distribution companies, people who are able to handling the events and coping with its destructive consequences and above all returning the conditions to initial status are elites and experienced experts of these companies. Solving occurred problem usually needs to making decision and

more important than that stability in decision making, for example, people displacement, buying some goods, transferring the equipment from a point to another one or even relationship with companies and other organizations. Elites and experts should be able to make such decisions while events occurs and all people of organizations should obey these decisions. While in normal situation, the decisions are made according to organizational structure that is managers and senior people of organization decide, other people of organization have to obey it. To be able to put responsibility on their elites and experts in events especially in critical conditions, electricity companies should be prepared before. One of this preparedness is talent management in electricity companies. Talent management is identifying, noticing, attention and strengthening the people who are able to manage the events (Armstrong, 2012). Management is a set of art and science that is it requires either natural talent or learning and training so people who are talented in management and are usually known passing the time and facing hard situation should be identified and trained scientifically and practically to be able to manage critical situation. Simulating crisis and doing operational maneuvers are also necessary for keeping and increasing the power of crisis management and training required elites, on the other hand senior managers of organization should dare to give the responsibility of making decision to experienced elites and experts and although the responsibility of making decisions is one them but final accountability is on senior managers of electricity distribution companies. All of these conditions will realize fifth characteristic of HRO.

## 5. Conclusion

If an organization wants to have high reliability performance that is not having failure in its mission or at least having rare failures and passes events successfully or in better word best management, it can use the characteristics of HROs. To achieve the characteristics of HROs that were mentioned in this paper, the security of personnel for reporting errors, creating trust among the personnel of organization, the survival of stored experience, high interaction of personnel with each other, trusting each other for exchanging the knowledge, high transmission speed for decision making in events, knowledge management for distributing organizational knowledge, job orientation in order to acquiring several skills, teamwork, organizational learning, identifying and promoting management talents in people of organization and ultimately creating loyalty and dignity for people who left the organizations for using their experiences in events are necessary.

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**Primary Paper Section: A**

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