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**Original article**

## **Monitoring the level of preparedness of organizational infrastructures for implementation of knowledge management (case study)**

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**ABSTRACT**

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In this work, the level of preparedness of organizational infrastructures for implementation of knowledge management has been investigated. Statistical population of this research consists of 277 employees of Western Azerbaijan province electricity Distribution Company with educational degrees higher than BSc which is estimated to be as much as 162 people according to Morgan table. To analyze the data, inferential statistics methods such as Kolmogorov – Smirnov, single sample test and Friedman test are used. Results of this work showed that organizational infrastructures of case study have sufficient preparedness for implementation of knowledge management; that is, human resources infrastructure, ranked first with respect to level of preparedness and after that was structural infrastructure, then fiscal infrastructure and finally, cultural infrastructure.

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**Problem statement**

Today, managers recognize the importance of knowledge and its management in organizations and seek implementation of knowledge management in their organizations. At the same time, they worry about being

unable to accomplish this work and knowledge management fails in their organization. Therefore, since success in knowledge management is a competitive issue, it is important for organizations to know that whether they are ready for implementation of knowledge management.

To implement knowledge management effectively, its success essential prerequisites must be available. Only attempt to implement knowledge management cannot help achieving this goal. Moreover, to make change in organization, appropriate structural, technological and human settings are necessary. To implement knowledge management, changes must be applied in harmony in all three fields (Jalali, Nezafati, 2007).

Western Azerbaijan province electricity Distribution Company is responsible for distribution of electricity of users and maintenance of high and low voltage network of Western Azerbaijan which is a part of public power network. Electricity is so associated with everyday life of the humans and technologies are so sensitive that not only do not tolerate power cut off, but also an intangible flicker of the power is harmful and may lead to irreparable damages especially in works which are knowledge based and every decision is in accordance with drawings, documents, information and updated data. As a result, investigation of the level of preparedness of the organization for knowledge management implementation is of great significance.

Understanding the importance and application of knowledge management in organizations and being interested in topics in the field of knowledge management has prompted the author to assess the effective factors for successful implementation of knowledge management in organizations. Therefore, author decided to study the organizational infrastructures of Western Azarbayejan province electricity Distribution Company and evaluate their level of preparedness for implementation of knowledge management so that by means of the research and information regarding readiness of infrastructures for implementation of knowledge management, can provide useful recommendations to improve and strengthen weak infrastructures and lead to a successful knowledge management implementation.

### **Research goals**

The main purpose of this work is to recognize the level of preparedness of organization infrastructures for implementation of knowledge management in Western Azerbaijan province electricity Distribution Company.

### **Main research question**

Are organizational infrastructures of Western Azerbaijan province electricity Distribution Company appropriately prepared for implementation of knowledge management?

### **Minor research questions**

1. What is the level of preparedness of IT infrastructure for implementation of knowledge management?
2. What is the level of preparedness of cultural infrastructure for implementation of knowledge management?
3. What is the level of preparedness of human resources infrastructure for implementation of knowledge management?
4. What is the level of preparedness of fiscal infrastructure for implementation of knowledge management?
5. What is the level of preparedness of structural infrastructure for implementation of knowledge management?
6. How much is the importance and priority of each infrastructure in this issue?

### **Main hypothesis**

Western Azerbaijan province electricity Distribution Company's infrastructures are sufficiently ready for implementation of knowledge management.

### **Minor hypotheses**

1. IT infrastructure of Western Azerbaijan province electricity Distribution Company has sufficient preparedness for implementation of knowledge management.
2. Cultural infrastructure of Western Azerbaijan province electricity Distribution Company has sufficient preparedness for implementation of knowledge management.
3. Structural infrastructure of Western Azerbaijan province electricity Distribution Company has sufficient preparedness for implementation of knowledge management.
4. Fiscal infrastructure of Western Azerbaijan province electricity Distribution Company has sufficient preparedness for implementation of knowledge management.

## **Terminology and definitions**

### **Knowledge**

In general, knowledge means any understanding, awareness or recognition which is obtained during study, observation or experience and by passing time. It means that data is converted to information by computer processing which is equal and the same for all. However, in the next step, utilization of this information will be knowledge generation. In brief, any processed information which is useful for achieving our organization goals is a type of knowledge.

### **Knowledge management**

Knowledge management is the process of creation, presentation and utilization of knowledge. Bon Fur considers knowledge management as a set of procedures, infrastructures and technical and managerial tools which are designed for creation, sharing and application of information and knowledge within and outside organizations. According to this definition, Schlumberger expresses the ultimate goal of knowledge management as follows: achieving this goal relies upon merging technology, processes and intellectual capital of people and converting these results into an effective and certain action (Entezari, 2006).

### **Effective organizational infrastructures for success of knowledge management**

Infrastructures of knowledge management are those mechanisms which enable organization to gain, keep, share and utilize the knowledge in organization. Knowledge management infrastructures are considered as the building blocks of knowledge management and nearly all organizations which applied knowledge management successfully, recognize the significance and necessity of a supportive infrastructure for knowledge management system. Hence, the fact that effectiveness and efficiency of the application of knowledge management in organization requires strong and appropriate infrastructures is confirmed (Hasan Zadeh, 2009).

### **Cultural infrastructure**

Organizational culture is a system consisting values and attitudes which are in mutual interaction with human force, organizational structure and control system and consequently, bases behavioral norms of the organization. Culture, establishes the organization and its activities. What is similar to action system of the organization is the one which guides personnel for the way of thinking, feeling and action. Culture is dynamic and fluent, never stops and may or may not be effective in a certain circumstances. (Pourkazemi, Shakeri Navaei, 2004)

### **Human resource infrastructure**

Obviously, the intelligence of the human is considered as the most valuable asset of an organization and implementation of systems and various methods in organization requires agreement and collaboration of people in all levels. In this way, using the valuable source of intelligence, creativity and wisdom of human resources for design and effective application of desired processes, the personnel will show the least resistance against change. For this reason, the attention of people is one of the main factors of organizations' success in implementation of knowledge management.

### **IT infrastructure**

IT is woven in organization body like nervous network and in addition to communicating various parts and facilitation of information flow among them, makes it possible to store and retrieve information and obtained and present knowledge by means of creating knowledge repositories and moreover, plays a key role in support and improvement of organizational learning.

Technologies such as network sharing of information via intranet and information gateways, makes creation of knowledge repositories easy. These repositories, not only record regular notes and handbooks, but also records irregular knowledge including implicit knowledge, profession, solutions, events and so on.

### **Structural infrastructure**

Organizational structure is the result of arrangement and design of an organization consisting a set of relationships, rules and laws which are officially approved even if they are set informally and form the activities of people for achieving a common goal. Structure of an organization determines its potential to respond to surrounding challenges and improves implementation of solutions and achieving organizational goals (Rezaeian, 2009: 247-296).

### **Fiscal infrastructure**

Financial resources and budget allocation in each activity of an organization is an essential issue. Since knowledge management is a factor in organization development, to implement it, each type of organization must have a distinct investment to prepare required infrastructures. Budget allocated to hardware and software utilities, launching knowledge management systems and education of necessary processes to personnel and persuading them to improve the culture of knowledge sharing in organization, must be in an appropriate level to facilitate the sharing and management of knowledge.

### **Research method**

Since the purpose of this research is to answer an applied question regarding real position of the organization and ultimately leads to an improvement in executive methods and efficiency, moreover, since the present state of the organization describes the level of preparedness of organizational infrastructures, descriptive – gauging method has been used.

Research variables

In this research, organizational infrastructures include cultural, human resources, IT, structural and fiscal ones as independent and implementation of knowledge management as dependent variable.

### **Research category**

Regarding time, this research dates back to 2013-2014 and regarding place, it corresponds to Western Azerbaijan province electricity Distribution Company. Statistical community of research includes personnel with degrees higher than BSc of this organization.

### **Statistical community**

**Statistical community:** Statistical community of the present work includes all personnel with degrees higher than BSc of Western Azerbaijan province electricity Distribution Company which are 277 people.

**Sample volume:** since there is no information about variance of the community and the possibility of success or failure of the variable, Morgan table will be used to estimate the sample volume which is as much as 162 people.

### **Data collection tools**

In present work, to collect data, questionnaires are used since it is one of the most common methods of research and a direct method to obtain research data.

### Data analysis method

To investigate the simultaneous effect of independent variables on dependent one, inferential statistics method is used. Before performing statistical tests on data, Kolmogorov – Smirnov test is used to determine normal or abnormal data and to validate research hypotheses, single sample t test is used. Finally, to prioritize and determining significance of each organizational infrastructures, Friedman test has been used.

### Literature review

In the field of this topic and infrastructure factors and their effects on the success of knowledge management, various works are published which are described below:

1. Salavaati and Hagh Nazar (2009) analyzed the factors affecting implementation of knowledge management system in Iran National Oil Company. They investigated factors including: organizational structure, culture and IT. Results showed that organizational structure and culture in this company are of lower readiness compared to IT for implementation of knowledge management
2. Zamani (2007) in his work studied the infrastructures of knowledge management in University of Esfahan, school of educational and psychological sciences. Results demonstrated that among essential knowledge management infrastructures, technical one has a relatively good status. However, two other factors of management and organizational culture are not satisfactory.
3. Mamghani, Samizadeh and Saghafi (2011) evaluated the factors contributing to success of knowledge management in Iran research centers to provide a basis for assessment of preparedness of these centers for knowledge management and concluded that the success factors are: knowledge strategy, management support, motivating incentives for knowledge sharing and appropriate technical infrastructures.
4. Niaz Azari and Amooei (2007) in a paper entitled “factors contributing to implementation of knowledge management in Islamic Azad Universities of Mazandaran province”, found out that IT is an effective factor for implementation of knowledge management. However, despite of the importance of organizational culture and learning and human resources, they could not contribute to implementation of knowledge management
5. Rowley (2000) in a work entitled “is higher education ready for implementation of knowledge management?” studied the applicability of knowledge management concepts in Canadian universities. He stated that to provide an environment based on knowledge in universities, we are facing problems. Moreover, his results revealed that effective implementation of knowledge management in Canadian universities entails modification of organizational structure and reward system. Rowley considers infrastructures of Canadian universities satisfactory for facilitation of knowledge sharing activities.
6. In a research carried out by G. C. Thomas entitled “the effect of social and human factors on knowledge management”, he found out that these factors play a key role in all stages of establishment and utilization of knowledge management in organization and they must be considered in each stage of implementation of knowledge management in organization.
7. In determination of key factors in success of knowledge management, Muhammad Khalifa and Vanessa Live concluded that organizational factors and processes of knowledge management have the most significant contribution to success of these programs. IT affects by means of its contribution to knowledge management processes such as knowledge transfer and keeping (Abtahi, Salavaati, 2006).

### Data analysis

In testing main research hypothesis, results of single sample t test, level of meaningfulness achieved is less than 0.05 and therefore, main hypothesis is acceptable and Western Azerbaijan province electricity Distribution Company has required readiness for implementation of knowledge management.

Furthermore, results of Friedman test reveals a meaningful difference among dimensions of organizational infrastructures of Western Azerbaijan province electricity Distribution Company.

In this way, human resource infrastructure ranks first, then, structural, IT, fiscal and cultural infrastructures, respectively.

The average response points for first minor hypothesis is 3.37 and we have no reason to reject it and it means that cultural infrastructure of Western Azerbaijan province electricity Distribution Company, has sufficient preparedness for implementation of knowledge management.

For second minor hypothesis, the average response points is 3.59 and we have no reason to reject it and it means that IT infrastructure of Western Azerbaijan province electricity Distribution Company, has sufficient preparedness for implementation of knowledge management.

The average response points for third minor hypothesis is 3.87 and we have no reason to reject it and it means that human resources infrastructure of Western Azerbaijan province electricity Distribution Company, has enough preparedness for implementation of knowledge management.

For fourth minor hypothesis, the average response points is 3.49 and we have no reason to reject it and it means that fiscal infrastructure of Western Azerbaijan province electricity Distribution Company, has sufficient preparedness for implementation of knowledge management.

For the last minor hypothesis, the average response points is 3.63 and we have no reason to reject it and it means that structural infrastructure of Western Azerbaijan province electricity Distribution Company, is sufficiently ready for implementation of knowledge management.

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