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The study of the effect of knowledge management on organizational innovation based on mediating role of organizational learning among headquarter staff of developing Karoon Oil and Gas Company

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Abstract

The objective of this research is to study the effect of knowledge management on organizational innovation, taking the mediating role of organizational learning of the staff based in the headquarter of the Company Developing Karoon Oil and Gas into consideration. The current study is of applied research type as far as its objective is concerned. On the other hand, considering the way the data were collected, this research is classified as a descriptive or untestable study. The statistical group of the current study is the employees working for the headquarter of the Company Developing Karoon Oil and Gas who are more than 460 people. Based on Morgan table, 210 people were selected as the sample group of this study. According to the characteristics of this group, the classified random sampling method was used. The validity of the research tools was confirmed by the experts and reliability of the questionnaire was calculated to be 802/0 using Cronbach's Alpha coefficient for all parts of the questionnaire. In this study, four main hypotheses were confirmed with regard to the effect of knowledge management on organizational innovation, taking mediating role of organizational learning into consideration.

Keywords: Knowledge Management, Organizational Innovation, Organizational Learning, Company Developing Karoon Oil and Gas.

Introduction

In knowledge economy, the companies should adapt their knowledge and update it in order to maintain their innovative ability. Therefore, the relation between knowledge management and organizational innovation has turned to an important issue in research and practical areas. However, the organization cannot maintain many important methods of knowledge management by itself without enjoying suitable capacity in organizational learning. In the current world, knowledge management is known as the main source and origin of competitive advantage for the future. This means that in today's over-competitive world, knowledge management cannot be used to obtain competitive advantages and push forward the objectives in the organizations, but the skills of knowledge management are claimed to be effective to follow up and materialize innovation in the organizations. In modern economy, knowledge is the source of economic and industrial development and other traditional factors such as land, workforce and capital are of the second degree of importance (Durker, 1993). Organizations learn through either the processes in which new knowledge is created or their existing knowledge is revised. The basis of learning is knowledge from the viewpoint based on knowledge. An organization cannot compete with others in a variant environment without having sufficient knowledge and innovation of organizational capacities. At present knowledge or information are considered as the major strategic origin in the organization and the knowledge management has been taken into account as a vital factor in the organizational success. Knowledge management is important because knowledge is one of the most important tools of profitable and sustainable growth. The organizations need learning when they face a fluctuating and confusing environment in order to maintain their competitiveness. Organizational learning

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is the characteristics of knowledge management through which the individuals acquire information and knowledge and put it into practice. On the other hand, exercising knowledge management will result in increased organizational learning ability. Knowledge management is noted because it is used as a process through which companies create their collective and original knowledge. This process includes organizational learning and knowledge production and distribution (Liou, 2010).

Theoretical Basis and Research Model

Knowledge Management is a process through which the organization deals with producing wealth out of knowledge and or its intellectual capital (Takuchi, 1995).

Also to define knowledge management, Malhotra expresses that knowledge management is a process through which the organizations acquire skills in the field of learning, internalizing knowledge, coding knowledge, externalizing knowledge, distributing and transferring knowledge (Abtahi, Salavati, 2006).

Furthermore, Belant believes that knowledge management is a process which is used by the organizations through their collected information (Abtahi and Salavati, 2006).

What is knowledge management?

The thematic study under the title of knowledge management started for the first time together with the annual report of 1994 by the Swedish Company, vanguard in financial services called Skandia Financial Service. This report consists of a series of financial analyses that tried to quantify the value of intellectual capital of the company, i.e., knowledge assets. The company achieved a non-quantitative aspect that was under attention from the past: Intellectual capital is at least as effective as the traditional financial properties to supply sustainable incomes. Skandia Financial Service proved something that was suspected by many directors for years. Knowledge is a valuable asset that needs to be used like other assets. Rading (2004) said that raising knowledge as a vital factor to maintain a firm's competitive advantage is not a new thing. Alfred Marshal (1999) wrote in the book called fundamentals of micro-economy more than a century ago that 'knowledge is the strongest production engine.' Likewise many scientists emphasized on the importance of the role of knowledge in economy following World War II. Since knowledge management was studied through different approaches, many definitions were presented in this regard. Therefore no definition could be found upon which there is an international agreement. Dunport (1998) believed that 'knowledge management is an attempt to discover the hidden assets in the people's minds and turn this hidden treasure to organizational assets so that a vast group of people who are involved in organizational decision-makings could have access to this wealth and use it.' Gandhi, 2004 defined knowledge management as follows: 'knowledge management is an attempt to turn the staff knowledge (human asset) to joint organizational properties (structural intellectual capital).

Organizations need new thoughts and ideas in order to survive in the fluctuating and developing world of today. Increase of threats from one hand and use of opportunities from the other hand in a fluctuating and unpredictable environment makes the organizations face huge tides and this challenges them with change and innovation.

Learning is the main origin of the competitive privilege. Learning is for change, in other words, learning should turn to a development and positive development to a habit in an organization. In the same direction, successful organizations have started adopting special notes and solutions for their economic activities in order to reach their objectives among which abidance by commitment to serve the customers or being customer-centered and possession of insightful organizational culture could be named. Today the proper management of the human resources has become so important that other management issues fall behind and in order to train human resources, establishment of conditions that grow the learning organization is a fundamental necessity (Mirshahi, 2009).

Conceptual Research Model

This model is a logical network which was identified out of the existing relations and effects among variables following the research process. This model was extracted from Fornell and Lucker Model and the researches of the study.

Materials and Methods

Knowledge management questionnaire comprising of 10 options was designed in order to study the three processes (knowledge acquisition, knowledge transformation and knowledge application) according to Fornell and Lucker Model (2010) and

made by the researcher. Organizational innovation questionnaire comprising of 4 options was designed in order to study the four parameters (behavioral innovation, product innovation, process innovation, market innovation and commitment strategic innovation) according to Fornell and Lucker Model (2010) and made by the researcher. Organizational learning questionnaire comprising of 8 options was designed in order to study the four parameters (management commitment, system perspective, test and clarification, knowledge transfer and consolidation) according to Fornell and Lucker Model (2010) and made by the researcher. Since the objective of the research is to develop applied knowledge in the area of innovation and knowledge management, it is based on applied objective. Also according to the method of collecting data, since it deals with description of conditions with the untouched phenomena under study and expresses the effect of the variables, the research is of descriptive and causative type.

Analysis of findings has two major parts. The first part covers description of data from questionnaires and the second part covers the test of hypotheses.

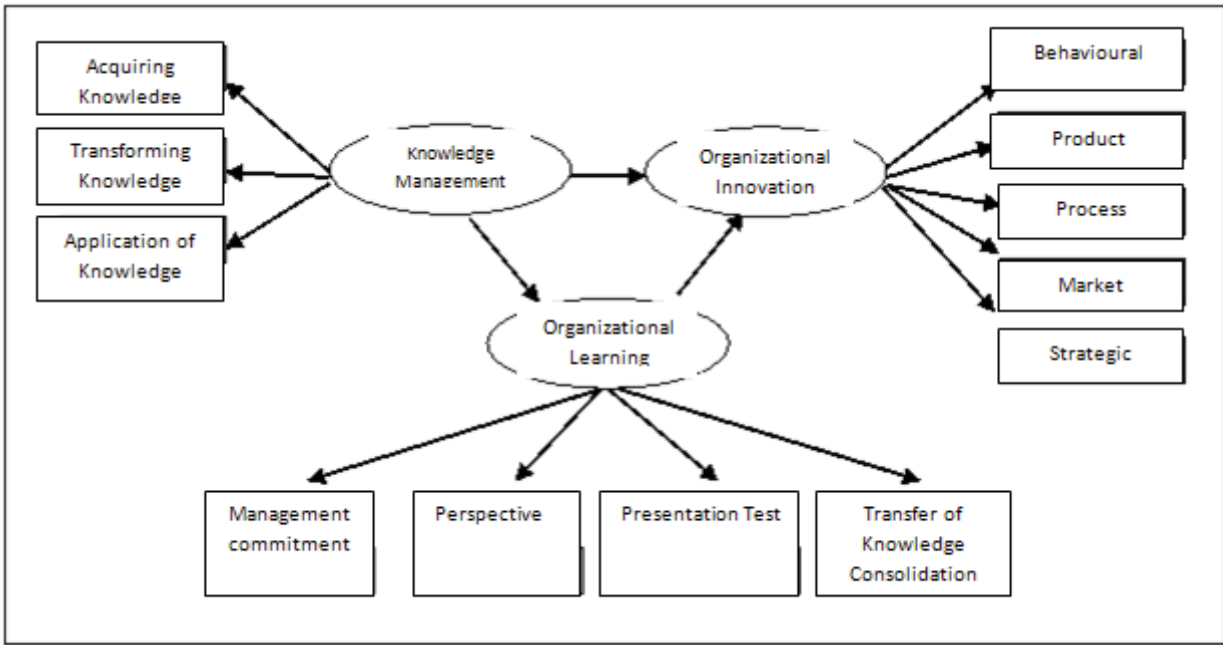

Figure 1. Conceptual research model – extracted from Fornell and Lucker Model

Results

In this section, the information from the demographical data and the data collected from the responses to the questionnaire are analyzed. Some of the results from the characteristics of the members of the statistical group such as their age, education, tenure and gender are raised as follows:

The results showed that 89.5% of the statistical group is men as far as gender are concerned. In other words, 188 out of 210 people are men. The largest figure is attributed to Bachelor's degree as of 54.3% and the lowest figure to Master's degree as of 7.6% out of the total statistical group as far as the level of academic education is concerned. 187 employees were married showing 89%. Also 23 employees were single showing 11%.

Results of Findings

In this section, the information from the given responses to the questionnaire is analyzed as far as the above raised hypotheses and results are concerned. Firstly the results from structural equations of the research are presented and the research hypotheses are studied accordingly. After conducting the approved factor analysis and knowing the hidden variables, the hypotheses of the study are tested in this section through suitable analysis. In order to test the hypotheses, the structural equations and LISREL software are used.

To implement the structural equations model for testing the hypotheses of the research, firstly the outcome of the software showing the suitability of the structural model is presented

(99/0=/df2χ؛ 000/0=RMSEA؛ 96/0=GFI؛ 94/0=AGFI؛ 98/0=NFI؛ 00/1NNFI=؛ 00/1=CFI).

In other words, the observed data corresponds with the conceptual method of research to a large extend, Figure 2.

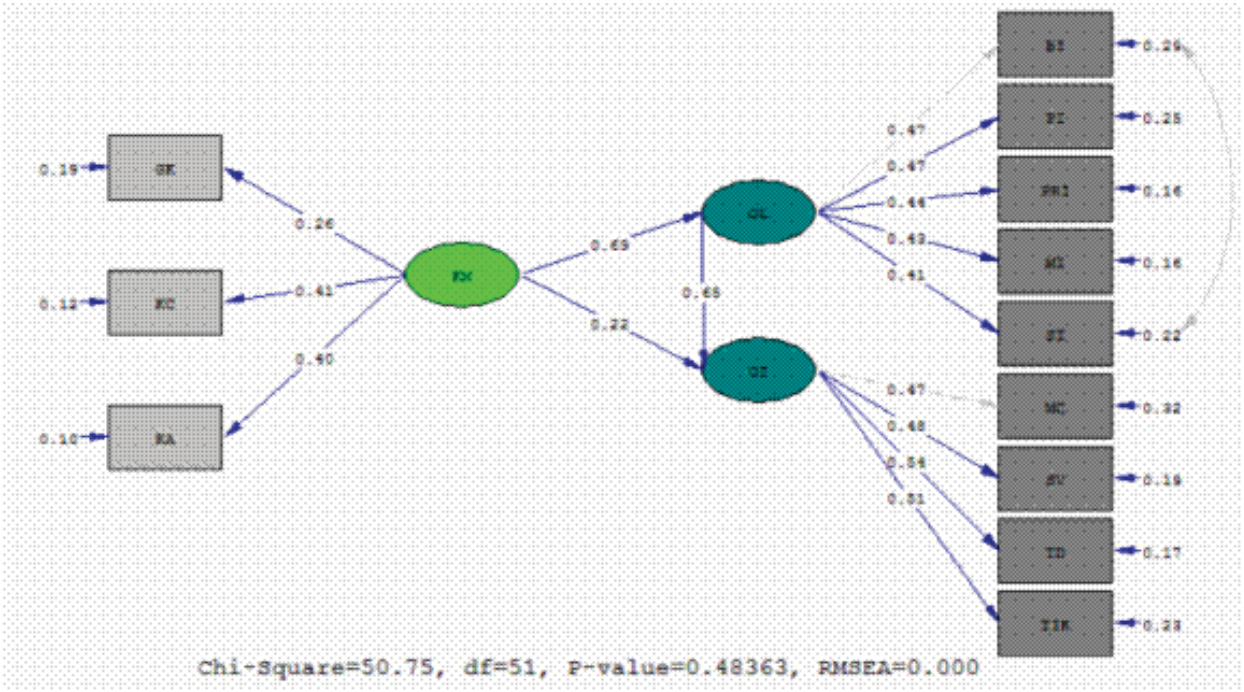

Figure 2. Structural research model to estimate the standard

The results of the structural equations model show that knowledge management has a positive and significant effect on organizational innovation (β=0.22؛ t=2.26) and organizational learning (β=0.69؛ t=7.20) among the staff of the headquarter of Karoon Oil and Gas Development Co. Also organizational learning has a direct effect on organizational innovation (β=0.65؛ t=5.62) and mediates in the relationship between knowledge management and organizational innovation significantly (β: 0.69*0.65=0.45 > β: 0.22). Hence the assumption of 'zero' is rejected and all the research hypotheses are confirmed.

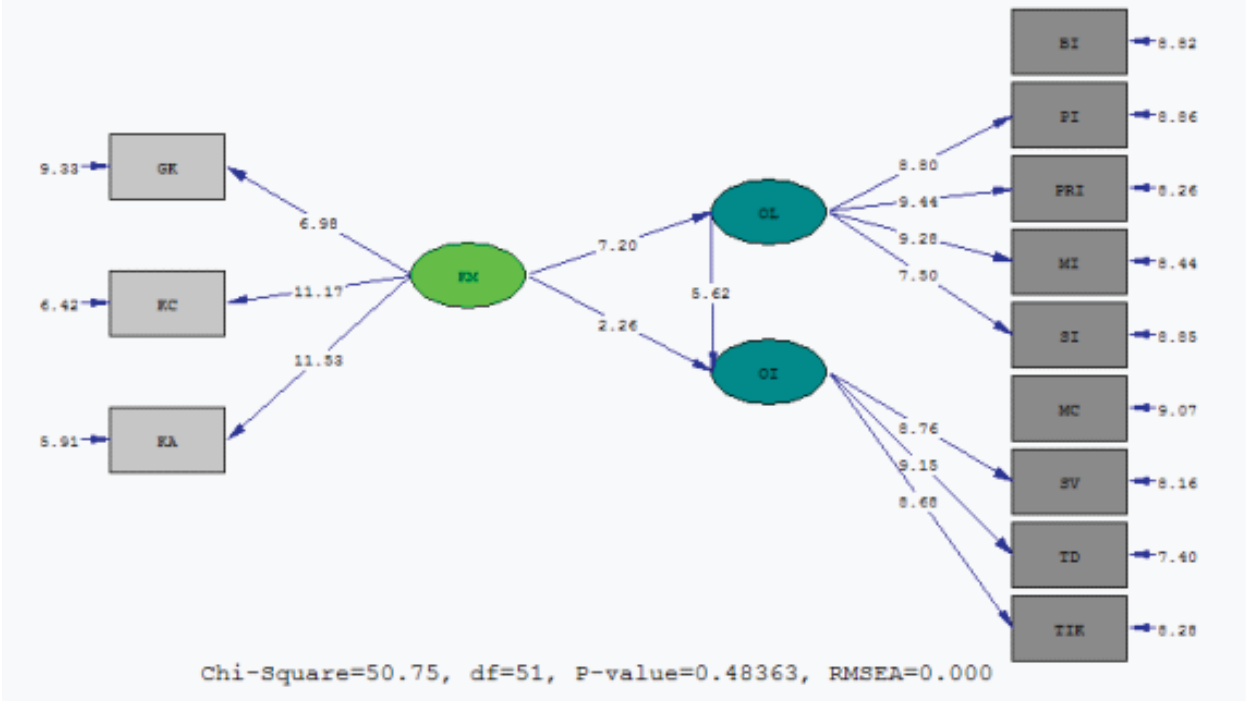

Figure 3. Significant figures of the coefficients of structural research model

Hypothesis Testing

First Hypothesis: The results of the structural equations model show that knowledge management has a positive and significant effect on organiza-

tional innovation. The result from the mentioned hypothesis shows the coefficient to be significant as of (22/0= t 268/0=β). This indicates the positive and significant effect of knowledge management on organizational innovation which corresponds with the absolute findings in 2007.

Second Hypothesis: The results of the structural equations model show that knowledge management has a positive and significant effect on organizational learning. The result from the mentioned hypothesis shows the coefficient to be significant as of (20/7= t 69/0=β). This indicates the positive and significant effect of knowledge management on organizational learning which corresponds with the Dosia Vera's findings.

Third Hypothesis: The results of the structural equations model show that knowledge organizational learning has a positive and significant effect on organizational innovation. The result from the mentioned hypothesis shows the coefficient to be significant as of (62/5= t 65/0=β). This indicates the positive and significant effect of organizational learning on organizational innovation which corresponds with (Heidari's findings, 2008).

Fourth Hypothesis: The relationship between knowledge management and organizational innovation mediates significantly. The standardized coefficient is significant as of (5/40= t 45/0=β) as far as the mentioned hypothesis is concerned. This indicates that a significant relationship mediates between knowledge management and organizational innovation which corresponds with the findings of Dorich (2005) and Tesing (2008).

Conclusion

Organizations are able to provoke and improve their knowledge of social assets. Using knowledge management will enable the company to have more effective decision-making processes. Nowadays the economic growth, increasing international competition and racing rate of changes require management of organizational knowledge and acquisition of competitive privileges more than in the past. Knowledge management and human resources are considered the single fundamental factor in any type of trade.

Recommendations of the study

1. It is suggested for the organizations to revive enthusiasm in their employees so that they welcome organizational learning more eagerly. A happy environment, away from stress and mental pressure has to be provided for the employees. In other words, more motivating and encouraging plans have to be used to let the employees have an active contribution to the learning process.

2. It is suggested to hold several training courses to increase professional skills to pave the ground for the success of the employees and the organization. The training rules and regulations should be completely clarified for the employees to make them interested in organizational learning.

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