IJBPAS, August, 2015, 4(8), Special Issue: 98-107

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

PROVIDING A STRUCTURAL MODEL OF INTELLECTUAL CAPITAL IN FARS WATER AND WESTE WATER COMPANY BASED ON ORGANIZATIONAL LEARNING

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ABSTRACT

This study has aimed to provide a structural model of intellectual capital in Fars water and waste water company based on organizational learning of employees. The statistical population has consisted of all employees in Fars water and waste water company in a number of 210 people. A total number of 185 people have been selected by Cochran sampling formula. Any flawed and incomplete questionnaires have been excluded from the research process and eventually 145 questionnaires which were fully responded were analyzed. The research tools were Bontis standard questionnaire to measure intellectual capital management and "Watkins and Marsick" questionnaire to assess organizational learning whose validity and reliability have been reviewed and approved statistically. The statistical results showed a significant and positive relationship between the individual components of organizational learning and intellectual capital. Organizational learning levels can predict intellectual capital; intellectual capital model has been presented based on organizational learning. Finally, practical solutions have been provided to improve the intellectual capital of the organization with the help of organizational learning.

Keywords: intellectual capital, organizational learning, Fars water and waste water company

INTRODUCTION

With the advent of the knowledge economy, knowledgement is of higher priority in comparison with the other factors of production such as land, capital and machines, so that in this economy, knowledgement is considered as the most important factor of production and it is taken into account as the most important competitive advantage of organizations. Nowadays in the developed countries of the world discussing of providence, the strategy of the organization centrality, production and sales of knowledgement, and the promotion of intellectual capital is extraordinary important that the phenomenon applies for all organizations in general.

In the knowledge-based economy, organizations live and die based on knowledge, and the most successful organizations are those that use intangible assets in a better and faster way [6],Intellectual capital provides a new resources base through which the organization can operate and to be considered important and necessary in identifying new modern business opportunities. Due to the transition of communities from the industrial age to the information age, the importance of effective use of intellectual capital, which is usually efficient in the success and failure of a system in today's competitive world, has been significant [6].

On the other hand, organizations are more successful that learn sooner, faster and better than their competitors. Just that's why the concept of a learning organization and organizational learning has been raised and is increasingly grown in recent years. Instead of their traditional behaviors that in its best form included education too, organizations become an organization that always learn, that is, they make their efforts in order to learn as a competitive advantage [1].

Organizational learning is considered as one of the establishment bases of knowledge management and one of the tools for achieving competitive advantage for current organizations management. The importance and necessity of this study is due the increasing importance of new organizational intangible assets in the real value of organizations and their performance and consequently their success and failure in today's complex and competitive environment. Organizational learning because of its impact on intellectual capital in the organization has led the research to be conducted with the aim of investigating the relationship between organizational learning

and intellectual capital in order to provide a model for a better understanding of these relationships and finally some recommendations for improving intellectual capital with the help of organizational learning to be expressed.

Research purposes

1. Determine the relationship between organizational learning and intellectual capital
2. Predict intellectual capital of employees in Fars water and waste water company based on organizational learning components
3. Provide a structural model of intellectual capital in Fars water and waste water company based on learning Organizational
4. Offer a proposal to promote intellectual capital in the organization based on organizational learning

Theoretical definitions of research variables

Intellectual Capital

Intellectual capital is search and follow-up the effective use of knowledge, in contrast to information [4],

Stewart [9],states that intellectual resources such as knowledge, information and expertise are means for creating wealth and introduces intellectual capital as the new wealth of organization. Stewart believes that intellectual capital is a set of knowledge, information, intellectual property, experience, competence and organizational learning that can be used to create wealth.

Dimensions of intellectual capital

A) Human capital: human capital is the storage of organizational knowledge which is embodied in employees of the organization. Human capital includes items such as knowledge, education, skills and innovation, and the ability to solve problems of the employees.

B) Structural capital: includes all non-human knowledge repositories in an organization including databases, organizational charts and processes, strategies and etc. that give a value to the organization beyond its material. Structural capital consists of philosophy and facilitating systems of organizational capabilities. In other words, structural capital is a supportive infrastructure for the empowerment of human capital in achieving functional goals[5].

C) Relational capital: relational capital is the knowledge focusing on creating value through the organizational relationships with its current and future customers which represents the potential of organization in the use of extra organizational intangibles (Bontis, 1998). This capital includes the

company's relationships with customers, shareholders, suppliers, competitors, government, public institutions and society [7].

Organizational Learning

Organizational learning involves the production of new knowledge, skills and behaviors and it's reinforced by interworking sharing and cooperative learning, (Teimoornezhad, Sarihi, 2010). From Argyris & Schon perspective, organizational learning occurs when members of the organization act as learning agents and react against changes of the organization internal and external environment, by recognizing and correcting errors and recording the results of this process, under personal perceptions and organizational patterns [2].

Dimensions of Organizational Learning

A) Individual learning: individual learning is a process of changing skills, insights and beliefs, transformation of individual knowledge, attitudes achieved by a person through individual studying, technology-based learning, observation and other ways of acquiring new knowledge which are achieved through the transfer and conversion of experience.

B) Group-level learning: successful level learning system ensures that groups share their positive and negative experiences with other groups in the organization to enhance intellectual development of the organization.

C) Organizational-level learning: although the individual, group and organizational relationship are related to each other, but organizational learning is more than the sum of individual and group learning, organizational learning in addition to occur through individuals and groups, is influenced by a large number of socio-political and structural variables (Azargoon, Fahimnia, 2011).

Literature review

Nazem and Matlabi in 2011 in a study investigated the structural model of organizational learning and intellectual capital in Shahid Beheshti University. The result of path analysis shows a significant relationship between the dimensions of organizational learning and intellectual capital and the most direct effect can be considered as a direct effect of organizational learning in organizational level in the dimension of organizational

learning on intellectual capital and human capital is known as the most important indicator of intellectual capital in this model. Hosnavi and Ramezan in 2010 studied the role of organizational learning in the creation of intellectual capital in industrial company of Esteban Sanat Pars. The results of this study showed that there is a significant relationship between organizational learning and intellectual capital in the company. To put it more clearly, with the increase of organizational learning, intellectual capital of the organization will increase in the dimensions of human, structural and relational.

Persikll in 1994 concluded that: the cause of organizations failure in learning is that they have failed with the continuous development of their employees and organizational learning. He provided a model to use the actual ideas of organizational learning in creating a learning organization.

MATERIALS AND METHODS

This study is a correlational study.consists of all Fars company water and waste water employees formally working in the organization in 2013 and 2014. a sample size of 185 people was obtained using Cochran sample size formula as well as estimating the theoretical mean and theoretical standard deviation of intellectual capital. In order to measure intellectual capital management Bontis standard questionnaire has been used, the questionnaire has 52 questions that responses to the questions are graded as one to five from strongly agree to strongly disagree. To assess the reliability, Cronbach's alpha reliability coefficient has been used which was obtained as 0.95, the structure validity of intellectual capital questionnaire has been studied using the investigation of the questionnaire components correlation, that the correlation coefficient of individual components with the test total score was more than 0.9 indicating the questionnaire has a good structure validity (internal consistency).To measure organizational learning "Watkins & Marsick" questionnaire has been used, the questionnaire has 43 questions that responses to the questions are graded as one to five from strongly agree to strongly disagree. To assess the reliability, Cronbach's alpha reliability coefficient has been used which was obtained as 0.97, the structure validity of organizational learning questionnaire has been studied using the investigation of the questionnaire components correlation with the test total score, that the correlation coefficient of

individual components with the test total score was more than 0.9 indicating the questionnaire has a good structure validity (internal consistency).

RESULTS

The first purpose of the study: determining the relationship between organizational learning and intellectual capital

Significance level	Pearson Correlation Coefficient	Variable
P<0/001	0/688	Organizational learning
P<0/001	0/645	Individual-level learning
P<0/001	0/732	Group-level learning
P<0/001	0/763	Organizational-level learning

Interpretation: Given the correlation coefficients and significance levels, there is a significant and positive relationship between organizational learning and all levels of organizational learning with intellectual capital.

The second purpose of the study: predicting intellectual capital in Fars water and waste water company based on the components of organizational learning

R^2	R	F score significance level	F	t score significance level	t	Beta	Std.E	B	Predictive variables
0/602	0/776	P<0/001	63/46	P<0/001	4/83	0/371	0/05	0/24	Individual learning
				0/108	1/61	0/132	0/046	0/075	Group learning
				P<0/001	4/69	0/380	0/054	0/25	Organizational learning

Interpretation: F value is significant in the regression analysis ($p<0.001$). Therefore the regression equation can be done and intellectual capital could be predicted based on organizational learning levels. The results also show that individual learning can significantly and positively predict intellectual capital. ($\beta=0.37$, $t=4.38$, $p<0.001$) and organizational learning can positively and significantly predict intellectual capital. ($\beta=0.38$, $t=4.69$ and $p<0.001$). According to the coefficient of determination (R^2) individual and organizational learning can simultaneously predict 2.60% of the variance of intellectual capital

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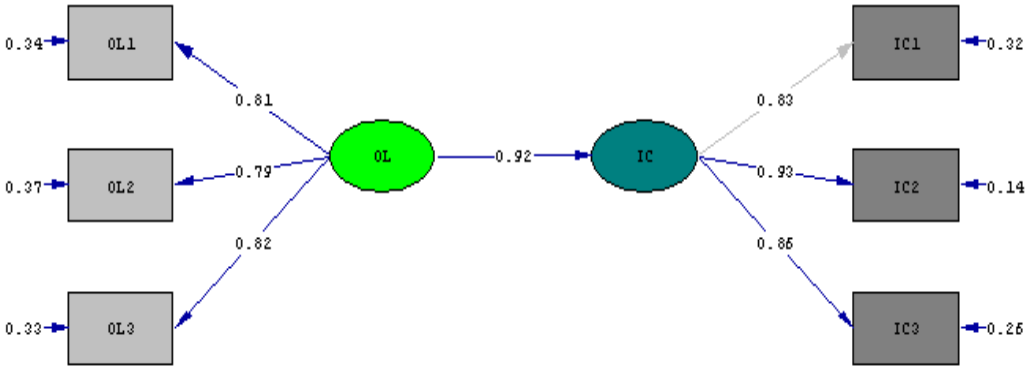
The third purpose of the study: providing a structural model of intellectual capital in Fars water and waste water company based on organizational learning



The figure above shows the connection pattern of organizational learning dimensions including "individual learning", "group learning" and "organizational learning" as the independent variables that have been measured by 13, 6 and 24 questions, respectively with the dimensions of intellectual capital including "human dimension", "structural dimension" and "relational dimension" as the dependent variables by that have been measured by 19, 17 and 16 questions, respectively which are not different with the real model of data.

The Lambda (loading or impact) of external hidden variable of the dimensions of organizational learning includes "individual learning" 0.81, "group learning" 0.79, and "organizational learning" 0.82, that with the combination of these parameters the variable of organizational learning is formed and totally, it has 0.92 impact factors on intellectual capital variable. More precisely, 92% of changes in the dependent variable of intellectual capital are covered by a series of the parameters and other prediction items are predicted by other variables. The variable of organizational learning indicates the highest degree, and the variable of group learning represents the lowest degree of internal coherence in the external hidden variable.

The Lambda of hidden internal variable of the dimensions of intellectual capital includes "human" 0.83, "structural" 0.93, and "relational" 0.86 that with the aggregation of these parameters the variable of intellectual capital is formed. The variable of structural capital represents the highest value and the variable of human shows the lowest value of internal coherence in the hidden internal variable.

Since the value of "goodness of fit index" in this model is 0.92 it can be noted that the model has an acceptable fit with reality. The coefficient obtained indicates the direct effect of organizational learning variable

with intellectual capital (dependent variable). The above model also represents that the most direct effect can be considered as the direct effect of organizational learning in the dimension of organizational learning on structural capital variable in the dimension of intellectual capital.

Organizational learning (0.82) + group learning (0.79) + individual learning (0.81) = Y (intellectual capital)

CONCLUSION

Providing strategies to increase intellectual capital in Fars Water and Wastewater Company with the help of organizational learning

With respect to the results of research, that intellectual capital has a strong and positive relationship with organizational learning, increasing organizational learning approaches the intellectual capital could be increased in the organization; strategies such as group exchange of individual learning in the organization, group learning conversion into organizational learning by transforming the learning to organizational rules and procedures to improve the organizational results and institutionalization of individual learning in organizations

- Helping employees in Fars water and waste water company to add their knowledge to the knowledge of other members of the work team and share their knowledge with other members of the organization to enable employees acting as an intermediary at the individual and organizational learning loop and increase organizational learning and finally enhance the intellectual capital in the organization.

- Improving information systems in the organization to facilitate interpersonal communications in the organization will increase the quantity and quality of interpersonal communications in the organization.

- Creating forums and launching virtual dialogue and think tank in the organization for the exchange of experiences among employees with allocation of knowledge code in order to maintain material and moral rights

- Increasing employees' individual skills particularly for new employees as well as holding training courses to familiarize the employees with the mission of organization, the organizations may help them in both knowing each other and organization. The training courses shall be such that to increase employees' skills. Consequently, it not only empowers employees to fulfill their obligations but also makes more cohesion of the employees.

- Increasing employees' understanding from different cultures through training courses and scientific meetings and journals and etc. so that employees believe it in the working environment and respect it.
- Forming short-term and long-term training courses for managers to understand the importance of intellectual capital in the organization and how to improve it in the organization.
- Holding meetings and discussion among employees to exchange their ideas and experiences leading to create new knowledge.
- Performing measurements in continuously and periodically about organizational intellectual capital by which studying to be able to achieve appropriate analyses on the elements and components of intellectual capital in the organization. Certainly these studies can help us to achieve higher organizational goals.
- The organization management should sometimes measure the intellectual capital among different units and parts of the organization so that to detect parts where there is higher amount of the capital, certainly encouraging all members in these sectors by management can help survive intellectual capital in the sectors and ultimately in the organization.
- After evaluating employees' intellectual capital, employees with high intellectual capital in the organization should be properly encouraged and praised to make their behavior as an appropriate model for other employees, and on the other hand beside encouragement the punishment has not to be forgotten. The sectors with low intellectual capital should not be encouraged as the parts with high intellectual capital.
- With regard to the role of managers in the development and promotion of intellectual capital, managers who have positive features regarding the promotion of intellectual capital in the organization need to be sometimes identified, encouraged and praised.

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