IJBPAS, August, 2015, 4(8), Special Issue: 108-116

ISSN: 2277–4998

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

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

A STRUCTURAL MODEL OF INTELLECTUAL CAPITAL BASED ON ORGANIZATIONAL INTELLIGENCE

ALIREZA MOOGHALI [1]*, ZAHRA JAHAN BEKAM [2]

1, 2: Department of Public Management, Payame Noor University, Iran

***Corresponding Author: E Mail: shoara.z @gmail.com**

ABSTRACT

The present study is conducted with the aim of providing a structural model of intellectual capital based on organizational intelligence in Fars Water and Wastewater Co. (Fars WWC). The total number of Fars WWC employees is about 210. 185 employees were sampled using the Cochran sample size formula and 145 questionnaires, which were fully answered, were finally analyzed statistically. Data collection instruments in this study are comprised of the standardized intellectual capital questionnaire developed by Bontis and the standardized organizational intelligence questionnaire developed by Albrecht. Test results showed that there is a significant positive correlation between each single component of organizational intelligence and intellectual capital. The components of organizational intelligence can predict intellectual capital. The structural model of intellectual capital in this study is developed based on organizational intelligence. Finally, practical strategies are suggested for improving the intellectual capital of the organization through organizational intelligence.

Keywords: intellectual capital, organizational intelligence, Fars Water and Wastewater Co. (Fars WWC)

INTRODUCTION

Companies must have a competitive advantage to improve their performance against competitors and maintain their position in the complex and changing conditions of today's markets. In recent years, not only the sensitivity to competition has increased in the market, but also the nature of competition has changed. The focus of companies has shifted from investment in tangible resources to

investment in intangible resources to achieve superior performance and competitive advantage. Among intangible resources in the organization is intellectual capital [7],Intellectual capital includes knowledge, skills, communication and other components and is known as a key factor in maintaining a competitive advantage for companies. Many researchers believe that the role of intellectual capital as the main source of competitive advantage for companies is increasing day by day[4],On the other hand, organizational intelligence has attracted the attention of many researchers as an element that is effective in knowledge creation. Smart organizations gain higher levels of income from knowledge and have a much better performance because they invest more in their intangible assets. Organizational intelligence refers to a comprehensive knowledge and awareness of all the factors that affect organizational management decisions. Considering the huge contribution of organizational intelligence to an organization's intellectual capital, the present study analyzed the relationship between organizational intelligence and intellectual capital, provides a model for a better understanding of this relationship, and finally presents recommendations for improving the intellectual capital of an organization with the help of organizational intelligence.

Research Objectives

1. Determining the relationship between organizational intelligence and intellectual capital
2. Predicting the IC intellectual capital of employees at Fars Water and Wastewater Co. based on the components of organizational intelligence
3. Providing a structural model of intellectual capital in Fars Water and Wastewater Co. based on organizational intelligence
4. Proposing strategies for improving the intellectual capital of the organization based on organizational intelligence

Theoretical Definitions of Study Variables

Intellectual Capital

The term intellectual capital was first used by John Kenneth Galbraith in 1996. In an article in 2002, Bonits and Holland wrote that intellectual capital refers to a source of knowledge that exists at a certain point of time in an organization.

Dimensions of Intellectual Capital

A) Human Capital: Human capital is one of the main dimensions of intellectual capital and includes all personal capabilities, knowledge, skills and experience of the

directors and employees of the organization [3].

B) Structural Capital: Brookings (1996) believes that capital structure includes structural assets such as technology, processes and ways of working as well as intellectual properties such as technical knowledge, trademarks and patents products.

C) Interorganizational Capital: Bontis (1998) defines interorganizational capital as the knowledge focused on creating organization values through interorganizational relationships with current and future customers indicating the potential use of external intangibles [6].

Organizational Intelligence

Organizational intelligence is the ability of an organization for knowledge creation and its application in order to cope strategically with the environment. Organizational intelligence can improve the current situation by extracting, analyzing and using data in relation to past experiences (Leon & Atanasiu, 2008). Organizational intelligence enables us to make organizational decisions. It refers to a comprehensive knowledge of all the factors that affect the organization – a deep knowledge of all the factors such as customers, competitors, economic conditions, and organizational operations and processes that exert a huge impact on the quality of management decisions in organizations [7].

Indicators of Organizational Intelligence

1. **Strategic vision**: The ability to create, evolve and express the objectives of an organization.
2. **Shared destiny**: A sense of common purpose among all the members of an organization for acting synergistically.
3. **Willingness to change:** Adaptability and willingness to change for achieving the strategic vision.
4. **Morale:** Organizational psychologists define it as the attempt to do things at a higher level of energy typical in an organization.
5. **Unity and consensus**: The presence of a system or a series of specific rules to be observed by individuals and groups.
6. **Application of knowledge**: The effective use of knowledge, information, and data
7. **Performance pressure**: Each performer must have a certain executive position.

Literature Review

Yaghoubi, Kazemi & Moludi (2010) in their research found that there is a significant

relationship between all aspects of organizational intelligence and intellectual capital as the components of shared destiny, unity and consensus, application of knowledge, and performance pressure have the highest role in predicting intellectual capital. Through scientific and experimental studies, Bontis [8].developed a comprehensive framework to easily identify and measure the components of intellectual capital and their impact on organizational performance. Wang et al. (2005) also analyzed the impact of intellectual capital on job performance and found a direct relationship between the components of intellectual capital and job performance.

MATERIALS AND METHODS

This study uses a correlational design. The statistical population consists of all the employees of Fars WWC who were officially serving this company during the years 2013 and 2014.The researchers used Cochran's formula to determine the sample size (n=185) by estimating the mean and standard deviation.

In order to measure intellectual capital management, we used a questionnaire developed by Bontis. This questionnaire includes 52 items, which are rated on a 5-point Likert scale strongly agree (=1) to strongly disagree (=5). Cronbach's alpha reliability coefficient is used for measuring the reliability of the questionnaire (α=0.95). The structural validity of the intellectual capital questionnaire is tested through analyzing the correlation between questionnaire components and the total score. The coefficients of correlation between all the components and the total score were higher than 0.9, indicating a favorable level of validity (internal consistency)The organizational intelligence questionnaire used in this study is taken from a study by Mahan Salasel et al. (2009). This questionnaire has 48 items. The organizational intelligence score varies between 48 and 245 for each respondent. To confirm the validity of the questionnaire, Mahan Salasel et al. (2009) had experts and professors in the field to verify that the questionnaire was an appropriate and reliable tool for measuring organizational intelligence. So, using probability theory, the organizational intelligence questionnaire yielded a reliability of 0.93. Despite the fact that the questionnaire was already confirmed, the researchers analyzed its reliability and validity once again in this study with the SPSS software product. The questionnaire yielded a Cronbach's alpha coefficient of 0.977 for the 48 items using. Since this amount is higher than 0.7, the

questionnaire is marked by a favorable reliability.

RESULTS

Research Objective 1: determining the relationship between organizational intelligence and intellectual capital

Variable	Pearson's r	Significant level
Organizational	0/703	P<0/001
Strategic vision	0/707	P<0/001
Shared destiny	0/683	P<0/001
Willingness to	0/745	P<0/001
Courage and	0/650	P<0/001
Unity and consensus	0/709	P<0/001
Application of	0/678	P<0/001
Performance	0/765	P<0/001

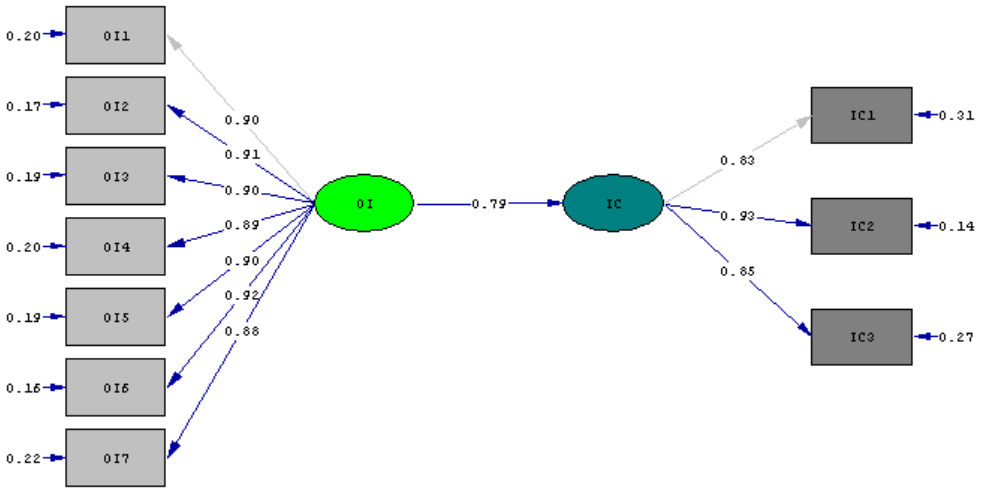
Interpretation: Considering the significant level and the correlation coefficients between intellectual capital and the components of organizational intelligence, we can conclude that there is a significant positive correlation between intellectual capital and (the components of) organizational intelligence. All the coefficients are higher than 0.6, indicating a strong relationship between intellectual capital and (the components of) organizational intelligence.

Research Objective #2: Predicting the intellectual capital of Fars Water and Wastewater Co. based on the components of organizational intelligence

Predictor Variable	B	Std. E	Beta	T	T statistic significant level	R^2	R	F statistic significant level
Organizational intelligence	0/067	0/078	0/109	0/86	0/391			
Strategic vision	0/12	0/084	0/193	1/43	0/154			
Shared destiny	0/053	0/077	0/087	0/69	0/49			
Willingness to change	0/183	0/069	0/35	2/64	0/009	0/610	0/781	P<0.001
Courage and passion	-0/102	0/078	-0/17	-1/31	0/192			
Unity and consensus	0/098	0/067	0/2	1/47	0/142			
Application of knowledge	0/054	0/074	0/088	0/73	0/465			

Interpretation: The F statistic in this regression analysis is significant ($p<0.001$). So, the regression equation is operational and intellectual capital can be predicted based on the components of organizational intelligence. The results also show that the component of unity and consensus is a significant and positive predictor of intellectual capital ($\beta=0.25$, $t= 3.9$ and $p=0.001$). Considering the coefficient of determination (R^2), this component of organizational intelligence can explain 61 percent of the variance of intellectual capital.

Research Objective #3: Providing a structural model of intellectual capital for Fars Water and Wastewater Co. based on organizational intelligence



CONCLUSION

The above figure is a measure of the relationship between (the components of) organizational intelligence including strategic vision (7 questions) shared destiny (7 questions), willingness to change that (7 questions), unity and consensus (7 questions), application of knowledge (6 questions), performance pressure (7 questions), and courage and passion (7 questions) as independent variables and the three dimensions of intellectual capital including human capital (19 questions), structural capital (17 questions), and interorganizational capital (16 questions) as dependent variables. This model is not different from same the real pattern of the data. The Lambda value (loading or impact) for each of the extraneous, hidden variables of the components of organizational intelligence is listed here: strategic vision=0.90, shared destiny=0.91, willingness to change=0.90, unity and consensus=0.89, application of knowledge=0.90, performance pressure=0.92, courage and passion=0.88. The sum of these indicators makes up organizational intelligence and has a 0.79 coefficient of impact on the variable of intellectual capital.

To be more precise, 79 percent of the variance of the dependent variable of intellectual capital is covered by the sum of these indicators whereas the rest of the variance is predicted by other variables. The variable of performance pressure represents the highest intensity and the variable of

courage and passion represents the lowest internal consistency in extraneous, hidden variables. The Lambda value for each of the extraneous, hidden variables of the components of intellectual capital is listed here: human capital=0.83, structural capital=0.93, and interorganizational capital=0.85. The sum of these indicators forms the variable of intellectual capital. The variable of structural capital represents the highest intensity and the variable of human capital represents the lowest internal consistency in extraneous, hidden variables. Since the goodness of fit index of the model is 0.92, it can be said that this model is marked by an acceptable goodness of fit. The resulting coefficient indicates the direct impact of the variable of organizational intelligence on intellectual capital (the dependent variable). The model also suggests that the highest direct impact belongs to the impact of performance pressure under the category of organizational intelligence on the variable of structural capital under the category of intellectual capital.

Intellectual Capital (Y) = (0.90) strategic vision + (0.91) shared destiny + (0.90) willingness to change + (0.88) courage and passion + (0.92) performance pressure + (0.90) application of knowledge + (0.89) unity and consensus

Suggested strategies for increasing the intellectual capital of Fars Water and Wastewater Co. with the help organizational learning

- Managers should treat their employees as effective members in the organization and get them involved in projects, programs, implementation and evaluation so they will recognize organizational missions and achieve a sense of empathy and solidarity with organizational goals. In such conditions, they recognize organizational position as their own position and this increases a sense of shared destiny, which is one of the components of organizational intelligence. With this method, empathy and trust increase among the employees and lead to improved organizational intelligence and intellectual capital in the organization.
- Managers can take concrete steps to create and develop organizational intelligence in organizations by creating a value-based and diverse atmosphere, encouraging a critical

spirit and a tolerance of failure, and enhancing employee motivation for cooperation and exchange of knowledge.

- It is possible to simultaneously increase organizational intelligence and intellectual capital in an organization by creating an appropriate environment for attracting new ideas, reviewing organizational strategies annually, determining value bases, minimizing bureaucracy, and focusing on environmental changes.
- Participation of employees in scientific conferences and their membership in scientific associations can improve their organizational intelligence. In addition, short-term and long-term training courses for organizational managers can help them recognize the importance of intellectual capital and how to improve it in the organization.
- It is suggested to perform measurements of organizational intelligence continuously and periodically to achieve a good analysis of the components of organizational intelligence. These analyses will certainly help us achieve higher organizational goals.
- After evaluating the organizational intelligence of employees, it is suggested to encourage employees who with higher levels of organizational intelligence so they can act as a good model for other employees. It is also suggested to define punishment strategies besides encouragement policies.

REFERENCES

1. Al-Habil, W. I., & Koraz, A. E (2012). Organizational memory impact on intellectual capital: Case study- Gaza power generating company. Journal of Business Management and Economics, 3(6)242-257.

2. Albrecht. kar (2002),"organizational intelligence & knowledge management".

3. Curado, C., Henriques, l., & Bontis, N (2011).Intellectual capital disclosure pay back. Management decision, 49(7), 1.80-1098

4. Hasti, Hassan. Nikoonesbati, Mohammed. KhanHosseini, Davood (2013). An analysis of the relationship between intellectual capital and market value of

companies listed on the stock exchange. Iranian Journal of Management and Budget, Vol. 18, No. 3, pp. 87-108.

5. Mousavi, Seyed Abbas. Hosseini, Sayed Yaqub. Mosleh, AbdulMajid. and Bahram, Parbaneh (2013). The impacy of intellectual capital on knowledge based companies. Iranian Journal of Management Studies (Improvement and Development), Vol. 23. No. 7, Spring and Summer 2013. Pp. 77-101.

6. Shojaee, Abdel Nasser. Beigy, Touraj. Nazaripour, Mohammed (2010). Identifying the interactions between the components of intellectual capital using structural equation modeling in the banking industry of Iran. Iranian Journal of Meta-Management, Vol. 4, No. 14., Fall 2010, pp. 19-48.

7. Sinaee, HassanAli. Hajipour, Bahman. and Taheri, Khadijah (2011). An analysis of the relationship between intellectual capital and firm performance, Iranian Journal of Change Management, Vol. 3, No. 5.

8. Bontis, N (1999). Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field. International Journal of Technology Management, 18 (5-8), 433-462.