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Study of Effect of Intellectual Capital on Organizational Performance in Iranian Organizations

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Abstract: The purpose of this study is to investigate effect of six elements of intellectual capital on organizational performance in Iran. The study was conducted using a structured questionnaire distributed to higher-level management working in various organizations in Iran. Sample size was 182 respondents out of 285 questionnaires distributed and selected randomly based on non-probability convenience sampling. Data collection will be analyzed using the multiple regression analysis method. The results of study showed that intellectual capital has significant influence on the organizational performance inIran. In term of importance, customer capital made the largest unique contribution to the model followed by spiritual capital, technological capital and structural capital. However, social capital and human capital has the lowest contribution.

Key words: Intellectual capital, organizational performance, Iranian organizations, distributed, data collection

INTRODUCTION

Today's world has created a conversion from being an industrial society to being an information society. This condition has increased the significance of information for enterprises. While everything is indexed to production andoutput growth is targeted at established companies, the goal of modern companies is including more information within services and products (Yyldiz, 2010). In other words, new richness and a source of value for the enterprises are theinformation assets, namely intellectual capitals that are ignored by conventional enterprises. Intellectual Capital (IC) is also known as the new invisible asset and the most widely used definition of intellectual capital is "knowledge that is of value to an organization." From this definition it is suggested that the management of knowledge (what is known) generate IC.

Nevertheless, Iran which is in its transformation process to k-economy, requires investments in the knowledge infrastructure. In knowledge-based economy, to be a developed nation and to maintain the developed status, highquality human capital is a priority. Furthermore, to increase the competitiveness of an organization, workforce mustbe more knowledgeable, adaptable and proficient. Thus, Government of Iran, realizing the urgency has identifiedthe development of human capital, upgrading the mentality and intellectual capacity of its people as one of the main agenda.

Bontis *et al*. (2000) said that there are three main elements of IC which are human capital, structural capital and customer capital. This study is an extension of research done by Bontis *et al*. (2000), by including additional three independent variables that consist of social capital, technological capital and spiritual capital. Therefore, this study is intended to determine the association between human capital,structural capital, customer capital, social capital, technological capital and spiritual capital with the dependent variables; organization performance.

Literature review: There is no generally accepted definition of intellectual capital yet. Sullivan (1999) defines intellectual capital as the information which is convertible to profit. Demirkol says that intellectual capital consists of the informationabout how to design an enterprise for it to carry out its duties and what to protect in order to carry on its activities. Inan article published in Fortune magazine, Stewart (1991) claims that patents, processes, management abilities, technology, customer and provider information and experience in particular depends on knowledge and all of this knowledge comes together and creates intellectual capital. In some other definition, intellectual capital is put forward as the economic value of intangible assets that a companyowns such as human resources, organizational and societal resources (Choudhury, 2010).

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It has been acknowledged by many researchers that IC is the most important strategic assets in evaluating the performance of an organization in the developing and under developed countries (Khalique *et al*., 2015; Kamaluddin and Rahman, 2013; Ngah and Ibrahim, 2009). The conceptof IC is broad and is normally split into a few characteristics which are human capital, customer capital, structural capital, social capital, technological capital and spiritual capital.

Human Capital (HC): There are vast studies that have investigated and proven that IC is significant towards organizational performance. One of them is human capital. Human capital is an amalgamation of genetic inheritance, attitude, education and people experience in their life and business. The most valuable asset in any business is human resources as compared to othercapitals or equipment. However, it was also believed to be the most ignored asset by the firms. Human can be considered valuable asset or liability to an organization (Khan *et al*., 2010). Human capital refers toexperts or employees skills, knowledge and experience shared with their organization in order to add value (Baron,2011).

Structural capital: Cikrikci and Dastan (2002) define structural capital as a mix of all elements, namely institutionalized databases inthe form of methods and policies that an enterprise has records and information technologies used for documentationin various configurations, organizational culture, financial relations and patents. According to Stewart structural capital belongs entirely to the enterprise. In contradistinction to human capital, structural capital stays insidethe organization even if people leave the company. Kavida and Sivakoumar (2009) define structural capital as everything that supports employees of the company, inother words the human capital. They assert that; structural capital contains elements like organization image,information.

Customer capital: Erkal defines customer capital as the total value of the relations of an enterprise with its clients. Kavida and Sivakoumar (2009) define customer capital as the strength of relationships with customers and loyalty of the customers. They stressed that customer capital has a central significance.

Social capital: Social capital refers to the institutions, relationships and norms that shape the quality and quantity of a society's social interactions among people and contribute to economic and social development. According to Hassan (2014), social capital plays a crucial role in facilitating adoption and overcoming constraints oflack of financial, human and natural capital. Furthermore, it is not just the sum of the institutions, which underpin a society, it is the glue that holds them together. Social capital can be a set of horizontal associations between people, consisting of social networks and associated norms that have an effect on community productivity and well-being.

Technological capital: Information Technology (IT), Research and Development (R and D) and innovation can be considered as technological capital. In order for knowledge to be shared swiftly and accessible to others, the existence technological capital isimportant. Collection, storing and distribution of information will be easier with the assistance of technological capital (Ngah, 2011). A study done on fabless firms in Taiwan, found that innovation and IT has positive impact on thecompany's performance (Lu *et al*., 2010).

Spiritual capital: Spiritual capital is the effects of spiritual and religious practices, beliefs, networks and institutions that have ameasurable impact on individuals, communities and societies. Furthermore, Marques (2008) found thatspiritual behavior in an organization will lead to enhanced corporate performance and advantages for multiple stake holders.

MATERIALS AND METHODS

In this research, structured questionnaires were adopted from Khalique *et al*. (2011) and Ngah and Ibrahim (2009). Questionnaires distributed to 285 respondents selected randomly based on non-probability convenience sampling where 182 respondents who participated were from various organizations in Iran. The response rate was 64% which was satisfactory. Data collected from the questionnaires were analyzed according to the Pearson correlation, Cronbach's alpha reliability test and multiple regression analysis. Figure 1 shows the association between the independent variables (HC, CC, StC, SoC, TC, SpC) and dependent variable (OP). The dependent variable for this study is the Organizational Performance (OP) which is study of various companies in Iran. So, the hypotheses developed in this research are tested as follows:

- H_1: Human Capital (HC) is related with organizational performance
- H_2: Customer Capital (CC) is related with organizational performance

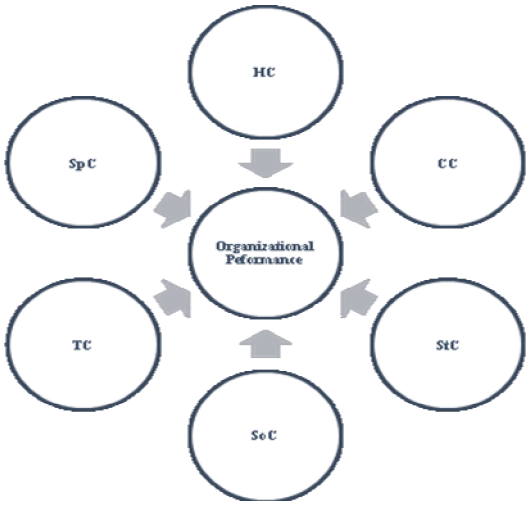

Fig. 1: Research conceptual frame work

- H_3: Structural Capital (StC) is related with organizational performance
- H_4: Social Capital (SoC) is related with organizational performance
- H_5: Technological Capital (TC) is related with organizational performance
- H_6: Spiritual Capital (SpC) is related with organizational performance

RESULTS AND DISCUSSION

Reliability test: A well-known variables to measure reliability is to use the Cronbach's alpha. The value of Cronbach's Alpha with the range of <0.70 is considered acceptable and good (Cavana *et al*., 2001). Results from the Table 1 point out the Cronbach's alpha for the four tested constructs were well above 0.70. Based on the finding, Cronbach's alpha for the variables ranged from lowest of 0.79 (Structural capital) to 0.92 (Social capital). In conclusion, the outcome concluded that the measurement scales of the variables were stable and consistent in measuring the variables.

Validity test: The purpose of the narrative is that measuring tools can be measure features and characteristics of the desired. In this study, the questionnaire was designed and developed, the validity of the questionnaire, has been determined an inner content with the faculty supervisor and consultant and university professors. In this method, a questionnaire was designed show to experts and commented on the content and including general questions designing and finally the difficulties and ambiguities have been resolved.

Table 1: Reliability of the variables

Variables	Cronbach's alpha
HC	0.82
CC	0.87
StC	0.79
SoC	0.92
TC	0.81
SpC	0.88
OP	0.91

Table 2: Correlation confficient analysis

Correlation (Probability)	HC	CC	StC	SoC	TC	SpC	OP
HC	1						
CC	0.656**	1					
StC	0.821**	0.712**	1				
SoC	0.723**	0.714**	0.758**	1			
TC	0.694**	0.748**	0.812**	0.845**	1		
SpC	0.734**	0.674**	0.785**	0.821**	0.753**	1	
OP	0.756**	0.699**	0.784**	0.801**	0.773**	0.726**	1

Correlation coefficient: Correlation coefficient must lies from -1.00 to +1.00. According to Pallant (2010), the value of correlation coefficient ranging from 0.5-1.0 is considered large and suggests the existence of strong relationship among independent and dependent variable. Table 2 shows that there is a significant correlation among independent variables and dependent variable. Therefore, this study suggests that there is a strong positive relationship between intellectual capital and organizational performance with minimum correlation of 0.656 and at 1% significance level.

Multiple regression analysis: The model was significant ($F(6.179) = 96.157$, $p<0.01$) with the predictors explaining 76.7% of the variation in organization performance. The findings as shown in Table 3 reveal that intellectual capital have significant impact towards organizational performance. In term of importance, customer capital made the largest unique contribution to the model followed by spiritual capital, technological capital and Structural capital. However, social capital and human capital has the lowest contribution. Among the six predictors entered into the model, four made statistically significant contributions with customer capital, structural capital, technological capital and spiritual capital having a positive relationship with organizational performance. The relationship between these variables is very strong at 0.01 level of significant and therefore, the result fails to reject H_2, H_3, H_5 and H_6. Thus, on the other hand, it was found that relationship between human capital and Social capital towards organizational performance is insignificant. Therefore, this study will reject H_1 and H_4.

Table 3: Multiple linear regression analysis

Variables	Std Coefficient	Sig.
HC	0.004	0.959
CC	0.271	0.000***
StC	0.223	0.002***
SoC	0.003	0.952
TC	0.219	0.003***
SpC	0.230	0.001****

$R^2 = 0.752$, ***p<0.01

CONCLUSION

A transformation is being experienced in the whole world. With this transformation, access to new technologiesis getting easier, improvement depending on process is being observed in product and service production and a high increase is occurring in the efficiency. Besides, information which has great importance today, may turn to aworthless stack tomorrow. Therefore, the effectiveness of intellectual capital that is the resource of knowledge canbe felt in every area.

Although, the effectiveness of intellectual capital is high, it is not enough by alone. In the literature conducted, it is seen that intellectual capital is being transferred to the innovation and thus leads performance increases. Therefore, governments of developing countries should balance resources in investing in IC and physical investments (Chen *et al*., 2005). On the other hand, Human Capital (HC) encompasses individual economic value. However, human intellectuality and competency is inadequate to as certain the effectiveness of HRM and organization performance. The results showed that HC alone could not contribute towards core competence of organizations performance. HC requires other organizational capital support such as structural capital (Bontis *et al*., 2000). Furthe rmore, firms which possess all the IC components are endowed with more strength to compete in the business as compared to those which possess only a single IC resource (Kamaluddin and Rahmam, 2013). All results of the case study lead to the conclusion that the success of the organization lays in the high degree of investment and recognition which has intellectual capital.

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