

## THE EFFECT OF INTELLECTUAL CAPITAL ON LEARNING ORGANIZATION

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**Abstract:** *This research was conducted to study the impact of intellectual capital on learning organization. The views of 233 staff and academic members of Mashhad branch, Islamic Azad University were obtained using sample random method. The used tool in this research was a questionnaire. Reliability was measured via used Cronbach's Alpha formula and in order to study its validity, conceptual-superficial method was used obtaining experts' views that indicated its suitability validity. To analyze the data, the software LISREL 8.8 was used to test the research hypotheses. The results showed that intellectual capital was effective on learning organization. Among the aspects of intellectual capital, human capital, structural capital and relational capital respectively have the highest effect on learning organization.*

**Key Words:** *Learning Organization, Intellectual Capital, Human Capital, Structural Capital, Relational Capital.*

### 1. INTRODUCTION

Nowadays organizations have gone under drastic changes. Organizational growth and transforming organizations from a closed form to a live entity and changing the fixed and pre-determined models of the organization to compromising and flexible models are examples of change that came into being in the organizations. According to Anthropic principle in a closed system, disorder will increase. If an organization does not adapt itself with environmental changes, it will suffer from disorder and will eventually stop working (Tohidi & Mandegari, 2012). In fact, organizations make attempts for the survival of their disciplined order and promotion so that they manage to grow quickly, to improve constantly and to achieve efficiency, profitability flexibility and preparedness for the future and to have a prominent position in the area of their activity through their resources internationally (Appelbaum & Gallagher, 2000). Knowledge of today is considered

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as one of the main and most important intangible assets of the organizations. This thought rejects the old way of thinking that the main part of the organizational assets was introduced to be the tangible assets (Gazor, Kohkan, Kiarazm, & Rastegari, 2013). Definition of intangible assets is expressed as follows: Non-physical resources with the value that is created by innovation, unique plans of the organization or by human resources. In knowledge-centred economy, the success of organization depends on the ability of managing intangible assets. The most important intangible asset of the organizations is the intellectual capital of that organization. Entrance into knowledge-centred economy requires achieving new models of organizational assets (Boekestein, 2006). Therefore due to weakness of traditional solutions under the current competitive conditions, it is necessary to form organizations according to learning and pursuing the new thoughts for the directions to run the organizations and also the thoughts that have developed the management and training methods of the organizations. The researchers believe that the only way out for the future organizations is to adapt with changes and developments and to transform to a learning system. Thus, the two key elements in relation with survival and progress of the organizations in the current competitive conditions are to pay attention to intellectual capitals of the organization as the most important capital and to turn the organization to a learning system to encourage dynamism and coordination with the environmental conditions (Appelbaum & Gallagher, 2000). The current research looks for studying the issue what impact the aspects of intellectual capital including human, structural and customer capital have on learning organization.

## **2. THEORETICAL BASES OF RESEARCH**

### **2.1. Learning Organization**

The approach of the organization as a learning system was raised in early 20<sup>th</sup> century. Frederick Winslow Taylor believed that when the management realities were explained to a manager, he could easily transfer what he has learned to others and consequently increase the efficiency of the organization. As you are aware, one of the principles of scientific management of Taylor and his followers is to support the staff through their job and educational planning. Later on the approach of the learning organization were revised and reviewed by theoreticians such as Richard Cyert, James March and Herbert Simon so that they found the ability to learn from experience one of the central mechanisms to maintain organizational performance. For this purpose, it is necessary for the organizations to collect data from old experiences and to create a cause and effect relation between action and result. To Garvin, learning organization is the organization which is able to create, acquire, and transfer knowledge and behaves in a way that reflects new knowledge and views. In Marquardt's opinion, a learning organization is the one that can learn collectively and changes itself in a way that can collect, manage and use

information in such an effective way that the organization succeeds in accomplishing its goal (Youzbashi & Mohammadi, 2012). In other words, a learning organization encourages members to draw from knowledge within the organization to strengthen their ability to think critically and creatively. The concept assumes that learning is an ongoing, creative and lifelong process; one that adapts and transforms in response to the needs and aspirations of people inside and outside the organization (Kearney & Zuber-Skerritt, 2012). The most of studies demonstrated relationship between these abstract phenomena and depicting organizational success as the ultimate goal behind continuous endeavours to promote organization wide learning (Maden, 2012). Organizational learning literature provides divergent definitions for the “learning” concept in organizational settings. Initially, Argyris (1977) defines organizational learning as “a process of detecting and correcting error” (p. 15) while Fiol and Lyles (1985) portray the term as “a process of improving actions through better knowledge and understanding” (p. 803). With a more comprehensive stance, Dodgson (1993) defines organizational learning as “...the ways firms build, supplement and organize knowledge and routines around their activities and within their cultures, and adapt and develop organizational efficiency by improving the use of the broad skills of their workforces” (p. 377). Though these definitions put emphasis on different constituents of organization wide learning, they all draw upon the following assumptions (Maden, 2012).

But according to the most of the researchers, the meaning of learning organization has attracted much attention since late 20<sup>th</sup> century by the researchers and leaders of the organizations. Everybody admits to the fact that publication of the book called ‘The Fifth Principle: ‘Art and Practice of the Learning Organization’ written by Peter Senge is the most important intellectual trend of this paradigm and Senge has been the founder of scientific thought by the learning organization in the past few years (Newbold & Pharoah, 2009). According to the viewpoint of Peter Senge, a learning organization is a group which is constantly after increasing its abilities to create things that it wants to create. According to Senge, an organization is a learning one that has five indices of individual ability, team learning, systematic thought, joint outlook and intellectual model (Fauske, 2006).

## **2.2. Intellectual Capital**

Intellectual capital is an ambiguous and sophisticated expression, but when it is understood and learnt, it could turn to a base of new resources through which the organization could compete. Along with development of the market value of knowledge-centred organizations, in 1990s, there was a more widespread interest in intellectual capital. That was why researchers tried to define and measure the intellectual capital as a whole which could not be measured till then. There were many definitions given for intellectual capital. Intellectual capital is the qualification

of the organization which mainly depends on the experience and expertise of the staff. In fact, the knowledge and experience of individuals inside an organization could create value. This issue happens through exchange of knowledge and creation of new knowledge. It should be noted that these qualifications are not created by individuals and within an organization, but they might be created by or through the environment where the organization is located (Wang, Wang, & Liang, 2014). Intellectual capital could be named as intellectual items that were gained, officialised and used for production of an asset with higher added value (Fattahi, & Afshar, 2006). The existing knowledge in the organization is raised at two individual and organizational levels. The individual level consists of knowledge, skill and talent and the structural level consists of special database of each customer, technology, methods, organizational processes and culture (Arenas, & Lavanderos, 2008). In fact intellectual capital is a set of knowledge-centred assets that is special to an organization and is considered as the characteristics of that organization. It is improved remarkably through adding value to the key beneficiaries of the organization and increasing the competitive advantage of the organization (Grimaldi, Cricelli, & Rogo, 2013). Bontis, 1998 believes that intellectual capital is the attempt to use the knowledge (final product) effectively against information (raw material). Intellectual capital has three dimensions as follows: 1) Human capital, 2) Structural capital and 3) Customer capital (Bontis, 1998; Dzinkowski, 2000; Ramý rez, 2010).

### ***2.2.1. Human Capital***

Some researchers report that human beings or human capital may be the only sustainable competitive advantage that an organization has in our globalized world. The notion of human capital has been motivated by the realization that the growth in physical capital has done little to explain the growth in income in most organizations, and intangible assets such as human capital have been the key contributor to economic development (Khasawneh, 2010). As human capital is increasingly being recognized as the most critical source of organizational capabilities, it is imperative that this asset is leveraged properly to provide optimal value for the organization because the contribution of human capital is likely to meet or exceed the value of financial capital (Gazor & Rastegari, 2013; Khasawneh, 2010). Becker (1993), the founder of human capital theory, defined human capital as the investment of organizations in education and training to increase employees' knowledge, expertise, and skills, which ultimately may maximize organizational productivity and outputs. Through investment in people, the quality of work improves; individuals acquire returns in the form of additional income, higher wages, greater economic security, and increased employment prospects; and the organization realizes economic benefits (Khasawneh, 2010). Human capital is defined as the collective ability of the company to extract the best solution through the knowledge of individuals. In this study, what is meant by human capital is the

level of individual knowledge that the staff of an organization have and this knowledge is usually implied. The indices of human capital in this research are notion, qualification, creativity, skill and expertise of individuals.

### ***2.2.2. Structural Capital***

Unlike human capital, where the different contributions appear to converge, in the case of structural capital there is evidently more divergence between the different conceptual definitions. Structural capital would be, according to Edvinsson and Malone (1997) the infrastructure that incorporates, forms and supports human capital, encouraging the human factor to create and to share knowledge (Dy'ez, Ochoa, Prieto, & Santidria'n, 2010). Bontis (1998) defined it as those mechanisms and structures of the organisation that can help support employees in their quest for optimum intellectual performance and by doing so, the overall business performance (Bontis, 1998). To Roos *et al.* (2001) structural capital included databases, procedural manuals, strategies, routines; in other words, everything in which knowledge may be found within the organisation, which differs from that which resides in the employees (Yitmen, 2011). So we can say structural capital is known as the organizational ability of the company (processes, policies, etc.) to meet the requirements and demands of the market. What are meant by structural capital are the entire non-human assets or abilities of the organization. The indices of structural capital in this research are organizational culture, organizational structure, organizational learning, operational process and information system.

### ***2.2.3. Relational Capital***

Relational capital refers to the ability of an organization to interact in a positive manner with the external stakeholders and thereby to actualize the wealth-creation potential of human and structural capital. It includes resources related to the firm's external relationships, such as its connections with its customers, suppliers, partners, and the local community, and the knowledge embedded in these relationships (Bontis, 1998; Kianto, Hurmelinna-Laukkanen, & Ritala, 2010). It would seem that relational capital is potentially more significant for service- than for production-oriented companies in that the former generally need to customize their customer offering to a greater extent in order to satisfy demand, and the typically closer interaction between the supplier and customer in co-producing the service poses larger demands in terms of mutual understanding and relationship quality (Tether & Tajar, 2008; Kianto, Hurmelinna-Laukkanen, & Ritala, 2010). Relational capital is the entire knowledge with regard to an organization with its environment including the customers, suppliers, scientific circles, etc. According to Chen, the most important part of the relational capital is customer capital because the success of an organization depends on its customer's capital. The customer's capital refers to the satisfaction and loyalty of the final user of the organization. The indices of

the customer's capital in this research consist of marketing abilities, customer's satisfaction and loyalty (Bontis, 1998; Chen, 2004; Crawford, 2005).

Considering the literature of the study and the concepts that were explained briefly, the three variables of human capital, structural capital and relational capital were defined as the independent variables, and the learning organization as the dependent variable in this study. On this basis, the conceptual model of the research is presented in figure 1, to study and form the hypotheses.

### 3. CONCEPTUAL MODEL OF RESEARCH

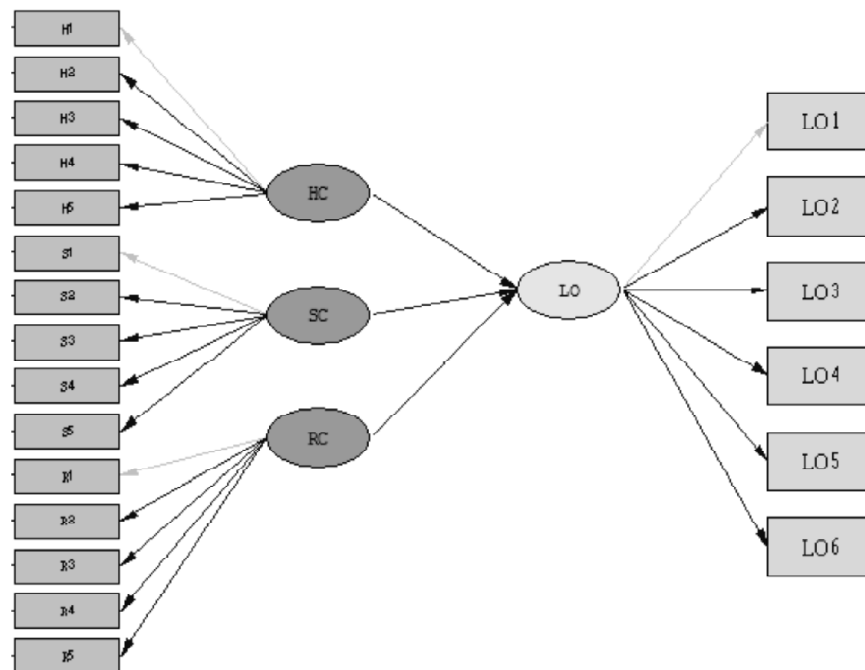


Figure 1: Conceptual model

### 4. RESEARCH HYPOTHESES

#### 4.1. Major Hypothesis

Intellectual capital has effect on the learning organization.

#### 4.2. Minor Hypotheses

1. Human capital has effect on learning organization.
2. Structural capital has effect on learning organization.
3. Relational capital has effect on learning organization.

## 5. RESEARCH METHODOLOGY

The current research is classified within the framework of quantitative-analytical studies. It could also be classified in the group of applied researches according to the goal. The statistical society of this study is all the staff and academic members of Mashhad branch, Islamic Azad University. To select the sample, sample random method was used. The sample size was determined according to the rule of ten samples for each of the latent variables. Since in this paper we have 21 latent variables; appropriate sample is defined to be at least 210. Questionnaire was prepared in two sections, having questions related to intellectual capital (including 15 items related to 3 variables) and questions related to the learning organization (including 6 items). The degree of agreement of the ones who were questioned with each market was measured by Likert's five-point scale. The questionnaire of intellectual capital was extracted from Bontis' article, 1998 and the questionnaire of the learning organization was extracted from Neefe's article, 2001. They were adjusted and localized using experts' views. The validity was confirmed using experts' views. For study the reliability of the questionnaire, firstly one 30-member sample was taken and the Cronbach's Alpha coefficient was calculated for the sample, using SPSS 17.0 software of which the results are shown in table 1. Also Cronbach's Alpha amount of the total questionnaire was calculated to be 0.817. Since the figure was more than 0.70, the good reliability of the questionnaire was approved. Then the data was analyzed using SPSS software.

**Table 1**  
**Cronbach Alpha's amount for each variable**

<i>variable</i>	<i>learning organization</i>	<i>Relational capital</i>	<i>Structural capital</i>	<i>Human capital</i>
Cronbach's Alpha	0.79	0.86	0.71	0.83

## 6. RESEARCH FINDINGS

LISREL 8.8 statistical software was used to test the conceptual model. Descriptive statistics and Pearson correlation coefficients were calculated first, after which the structural equation model (SEM) was analyzed. SEM bridges theoretical and empirical knowledge to allow a better understanding of the real world. This analysis establishes causal relationships among the latent variables and observed variables. The model specifies how latent variables or hypothetical constructs depend upon or are indicated by the observed variables (Yitmen, 2011). Figure 2 illustrates the results of hypothesized model used in this work, which represent the standardized structural coefficients.

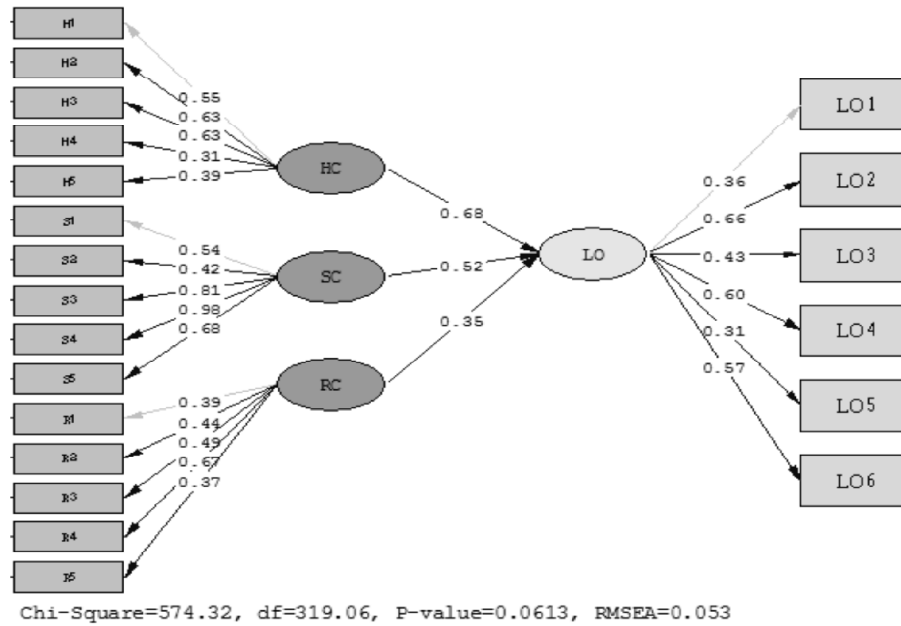


Figure 2: The results of conceptual model test (standardized solution)

Figure 3 illustrates the results of major hypothesis test, used in this work, which represent the standardized structural coefficients.

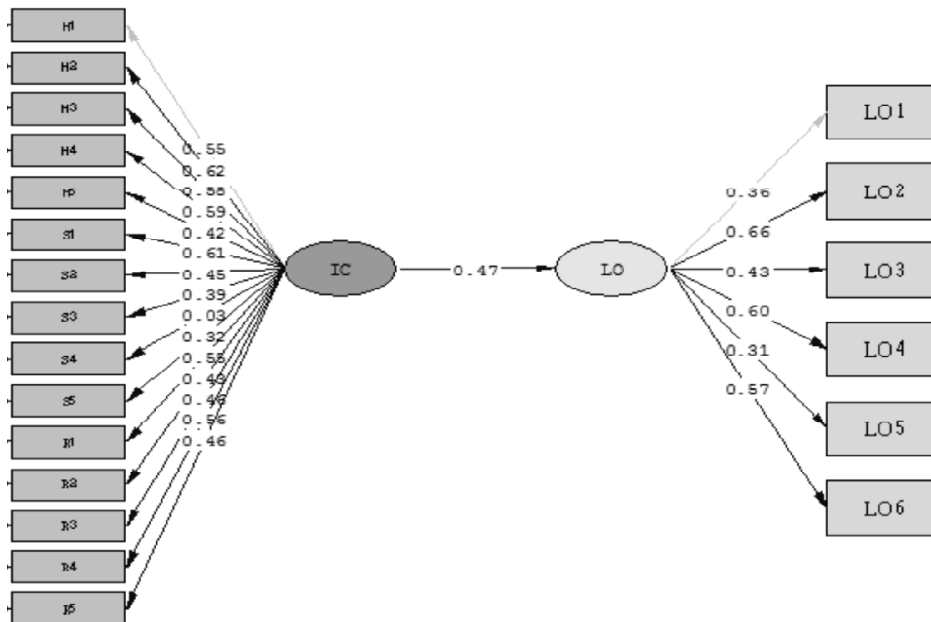


Figure 3: The results of major hypothesis test (standardized solution)



The estimated parameters between the main variables are presented in Table 2. The hypotheses regarding the relationships were tested based on the associated t-statistics. T-values exceeding 1.98 was considered significant at the 0.05 level. The results show the confirmation of the research hypothesis.

**Table 2**  
**Estimated Parameter for Structural Equations Model**

<i>Hypothesis</i>	<i>T-value</i>	<i>β -coefficient</i>	<i>Result</i>
Human capital has effect on learning organization	10.54	0.68	confirm
Structural capital has effect on learning organization	7.56	0.52	confirm
Relational capital has effect on learning organization	6.43	0.35	confirm
Intellectual capital has effect on the learning organization	10.23	0.47	confirm

After estimating the model parameters, the question that arises is to what extent the model developed is consistent with research data? To answer this question, we examined the model fitting. The results are presented in Table 3.

**Table 3**  
**Goodness-of-Fit Test**

<i>Fit index</i>	<i>Acceptable fit</i>	<i>Index research model</i>	<i>Result</i>
P-value	≥ 0.05	0.0613	good fit
X <sup>2</sup> /df	0-3	1.8	good fit
RMSEA	0-0.08	0.053	good fit
CFI	0.95-1	0.962	good fit
GFI	0.9-1	0.971	good fit

Given the range defined for the fit indices, the data in Table 3 shows the conceptual model is a good fit.

## 7. CONCLUSION

As the results of the study show, the three aspects of intellectual capital (human, relational and structural) are effective on parameters of the learning organization. Among these, human capital has the highest effect on parameters of the learning organization (Mashhad branch, Islamic Azad University), and after that respectively, structural capital and relational capital are. The results of Alikhani et al. survey (2013) with the title of "The relationship between human capital and learning organization components in faculty members of Imam-Khomeini hospital complex in 2011" indicate that there was a significant relationship between the human capital and learning organization components. Hasan Al-Onizat (2012) in a research titled "How Learning Organization Supports the Intellectual Capital Field Study at Jordanian Banks" shown that there is a relation between the learning

organization and intellectual capital. Galavandi et al., (2013) in a research titled "The Relationship of between Intellectual Capital and Organizational Learning (A Case Study of Faculty Members in Urmia University)" found that there is a positive significant relationship between the whole dimensions of intellectual capital with all factors of organizational learning. There is also a positive significant relationship among human capital, structural and customer with factors of organizational learning. In most of the research done in this area, the effect of intellectual capital on learning organization has not been investigated directly, and most of these studies have examined the relationship or the impact of intellectual capital on organizational performance. So that in this research one or more characteristics of a learning organization is considered as an indicator for organizational performance. The results of this study are consistent with the results of the present study in the weaker form or indirect form. For example, we can mention the following research. Sharafi et al., (2013) in a research titled "Relationship between Intellectual Capital and Function in Universities and Higher Education Institutes" found that Intellectual capital components have influence on the academic system performance. Jafari Farsani et al., (2012) in a research titled "Intellectual capital and organizational learning capability in Iranian active companies of petrochemical industry" found that there is positive and meaningful relationship between all three elements of intellectual capital and organizational learning capabilities. Among three elements, we have found that the relationship of human capital with organizational learning capabilities is more significant. The second level in the relationship study goes to the structural capital. The structural capital is a substantial element in developing the ideas and fosters the employees' relationship in knowledge share and distribution. As also noted in the findings of present study, in the present study, as well as Jafari Farsani et al. research, human capital is the most important factor and after that respectively, structural capital and relational capital are.

The results of Darvish et al. (2013) indicate that human capital, relational capital and learning capabilities have positive impact on organizational performance. In addition, relational capital positively impacts learning capability and human capital influences positively on relational capital. Abdullah et al. (2012) in them survey at the title of "The Relationship between Intellectual Capital and Corporate Performance" found that IC components has a significant positive relationship with corporate performance of Malaysian PLCs. Surprisingly, relational capital emerged as IC component that has the strongest relationship with corporate performance, followed by spiritual capital, structural capital and human capital. This result suggests that IC is vital to business success and performance.

As was mentioned, above researches results are compatible with the result of this research. Only in the Abdullah *et al.* survey unlike the results of this research, the impact of relational capital and structural capital is stronger than human capital.

In order to the Islamic Azad University of Mashhad be able being dynamics and learning organization recommended that:

1. The framework to assess the qualification of the staff and academic members including knowledge and skills, their abilities to design and the level of staff qualification which are measured regularly is planned in line with their development based on their qualifications.
2. Superior thoughts and innovations of individuals should be found valuable and endeavors have to be made to support and encourage the members.
3. Take steps to create the culture of distributing knowledge.
4. Establish and use suitable information system to facilitate transfer of knowledge and to save and reserve the created knowledge in the organization. Hence the organization will make the individuals' experiences and knowledge documented by establishing a suitable information system and will maintain them by creating databases and using them to facilitate things for other people.
5. Allocation of budget and time to research, development, cooperation and interaction with industry and scientific circles to achieve the current information and knowledge of the world.
6. Using the system of opinion polls to receive the views of the academic staff, employees and students.
7. Develop the communicative skills of the staff and the flexible structures supporting these relations in order to promote its performance. In this direction, identification of the students' needs and demands could be useful.
8. Also identification of the opportunities and threats of external environment and internal strong and weak points seem necessary to regulate instructions and policies of the organization.

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