

THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL AND ORGANIZATIONAL INTELLIGENCE IN KNOWLEDGE-BASED ORGANIZATIONS

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Abstract

This Research surveys the relationship between intellectual capital and organizational intelligence in knowledge-based organizations. This study is a descriptive correlation-survey research and the research population includes all educational institutions in Tehran-Iran. The size of sample has been determined equal to 200 people using random cluster sampling method. Pearson correlation coefficients and analysis of variances have been used to analyze data. The 49-item Albrecht's questionnaire has been used to assess organizational intelligence. The questions of questionnaire have been developed based on closed format and the quintuple Likert scale. Also, due to the similarity of some questions, the number of questions has been reduced to 42. This questionnaire measures human capital, structural capital, and relational (customer) capital. The data have been analyzed using SPSS software. Intellectual capital is known as a subset of organizational intelligence and its sub-structures are in relation with organizational intelligence sub-structures. As a result, a constructive relation should be made between the elements of intellectual capital and organizational intelligence to gain a competitive advantage. In recent years, good initiatives have been made in the field of knowledge-based organizations development. In order to more accurately assess the status of intellectual capital and organizational intelligence, it is suggested to study the components and sub-components of organizational intelligence which enhance organizational intelligence and increase the efficiency and effectiveness of knowledge-based organizations. To achieve the goal, it is necessary more scientific research to be performed in scientific centers.

Keywords: Intellectual Capital, Organizational Intelligence, Knowledge-based Organizations, Knowledge Management

Introduction

Knowledge management is a necessity in the development process. It is needed for all managers to use optimal methods to deal with changes ahead and the challenges related to international communications. All managers seek the best competitive strategy for competition of their subordinate organizations; hence, knowledge management can help the organization to confront global challenges through creating an environment for knowledge and its growth. The knowledge-based organizations have four characteristics including process, scope, purpose, and vision (Kaufman, 2004). Process refers to intra-organizational activities that directly involved in products or services. Scope refers to the boundaries of an organization which leads to the improvement of traditional boundaries through creating and sharing knowledge. Purpose refers to missions and strategies of an organization (how an organization serves its customers while being profitable). Vision refers to the worldview and culture that influences and constrains the decisions

and actions of an organization. In the beginning, most organizations had focused on real and visible activities that do it every day, but over time knowledge-based organizations have focused their attention on two interrelated dimensions: the effective use of existing knowledge and creating new knowledge. Here, the goal is fourfold as follows: ensuring that knowledge from one part of a company is applied to activities in other parts; ensuring that knowledge will be shared in the future so that the organization can benefit its previous experiences; to make it possible for people from various parts of the organization to find each other and collaborate to create new knowledge; and to provide opportunities and incentives for experimentation and learning. In today's economy, creating and sharing knowledge are not bounded by the traditional physical and legal limits of the corporation (Riyahi, 1993). Organizations are increasingly involved in the fulfillment of their knowledge. The major part of this knowledge is often gained through daily interactions with customers, vendors, partners, allies and even the rivals. A knowledge-based organization consists of supportive resources and individuals who create and use knowledge through continuous interactions; its boundaries are blurred, malleable and dynamic. The organization seeks places where knowledge is found and people who can help to identify the needs of the organization. On the other hand, it is not the concern of a knowledge-based organization who works for whom, but it is focused on the issue who needs to work with whom. A knowledge-based organization should hold a knowledge-oriented image of itself. That is, it takes knowledge into account in every aspect of its operation and treats every activity as a potentially knowledge-enhancing act. It uses knowledge and learning as its primary criteria for evaluating how it organizes, what it makes, where it locates, who it hires, how it relates to customers, the image it projects, and the nature of its competition (Shojayi, 2010). According to the above, the present study attempts to answer if there is any relationship between intellectual capital and organizational intelligence in knowledge-based organizations.

The literature review

According to the study done by Chen et al. (2004), customer capital is classified in the form of marketing, customer loyalty, and market intensity. The causal relations among employees' satisfaction, customers' satisfaction, customer loyalty, and the financial performance are considered as the most effective factors on the profitability process (Kaplan and Norton, 1996). The results of studies done by Alloy et al. (1999) showed that the fast delivery of goods can significantly increase the customers' satisfaction.

According to the studies of Fornell (1992), customers' satisfaction leads to maintain continuity of operations, reduce the flexibility of a product cost, and increase the credit of a company. Other studies also show that it is possible to predict customer loyalty through measuring the employees' loyalty (Horib, 1999). These studies provide further evidence regarding the importance of customer capital as a key component of intellectual capital.

Roos et al. (2007) concluded that despite the recognized and growing importance of intellectual capital as a vital source of competitive advantage, there is little understanding of how organizations actually create intellectual capital through active knowledge management. Creating knowledge requires a shared knowledge, a shared environment that can be physical, virtual or mental. In fact, in spite of information, knowledge creation cannot be separated from its environment. This indicates that the knowledge management procedures in organizations should be according to the knowledge needs of individuals or individuals' groups who are involved in knowledge creation. If an organization fails in coordinating the procedures with the requirements, the knowledge management systems may be neglected and the created knowledge may be out of knowledge management system.

The theoretical foundations

Intellectual capital

Actually, it can be said that the intellectual capital has always existed since the old days, but organizations were not aware of its importance. Firstly, the term “intellectual capital” was introduced in academic communities in 1964 by an economist called John Kenneth Galbraith to explain the gap between book and market values. The first report about intellectual capital was published in 1995 by Scandia Company which is the largest insurance and financial services company in Scandinavia. The accounting firm “Ernst and Young” is among the first audit institutions attempting to prepare reports on intellectual capital for their clients. In 1996, U.S. Securities and Exchange Commission held a conference as “capital”. In Iran, Riyahi is among the experts who have assessed the relationship between intellectual capital and financial performance of multinational businesses in their studies. Edvinsson and Malone are the other researchers who defined the value of intellectual capital as the difference between market value and book value of companies. Paloma Sanchez studied the management and reporting of intellectual capital at University of Madrid. According to the results of this study, transparency and accountability are the outcomes of market management and intellectual capital reporting. Considering the cases such as universities autonomy and state sovereignty, Paloma provided a theoretical framework for intellectual capital reporting in universities. The framework caused serious challenging discussions among the experts. Anthony Rojas studied the indicators related to the intellectual capital with regard to its scientific principles as well as academic conditions and characteristics and provided approaches to report and measure the intellectual capital fitting with the needs of universities. Europe Union and European universities have been a leader in the field of intellectual capital as well as its reporting and achieved significant results in this area. Spanish universities are among the European universities realizing the importance of this issue and its key role in the efficient management of the universities and achieving significant success through allocating a portion of their scientific research to the issue (Nazaripour and Parvizi, 2010).

In today's knowledge-based economy, intellectual capital is more important and valuable than physical capital for organizations and firms, so that the capital can be considered as a strategic tool for all organizations, especially universities. In this regard, Estram believes that the value of physical capital is reduced as a result of being consumed while the value of intellectual and social capital is reduced if it is misused or not used. Concurrent with the increase in market value of the knowledge-based organizations in the 1990s, wide interest to the category of intellectual capital have emerged among most organizations. Hence, many researchers attempted to define and measure a category that was immeasurable and non-reporting up to that time. Currently, there are various definitions of knowledge assets or intellectual capital in different resources that the most important of them are mentioned in table 1. What all experts agree on is that intellectual capital expresses the intangible value of an organization (Cooper and Sherer, 1984). With an overview of the intellectual capital definitions, it is clear that there is no consensus among experts on a specific definition of intellectual capital yet. A common feature of intellectual capital definitions is the fact that intellectual capital is intangible assets of an organization including knowledge (a part of human capital), structural capital, relational capital, organizational capital, domestic capital, and foreign capital.

Table 1: the definitions of intellectual capital

Name	Definition
Hall	According to Hall, intellectual capital can be classified as assets (for example; brand, database) or skills (for example; the technical

	knowledge of personnel, organizational culture)
Edvinsson and Sullivan	The knowledge that can be converted into value.
Brooking	A combination of four major parts: market assets, human-centered assets, intellectual assets, and infrastructural assets.
Sveiby	Including three classification of intangible assets as internal structure, external structure, and competence of staff
Roos et al.	Including an intellectual part (such as human capital) and a nonintellectual part (such as structural capital)
Stewart	The formal and intellectual elements (such as knowledge, information, intellectual assets, experience) that can be put to use to create assets with more added value.
Bontis et al.	A concept classifying all intangible resources and their interrelationships
Lev	Sources of future profits (value) resulted from innovation, the unique initiatives of organization, or the experiences of human resources
Paloma	A combination of intangible resources and their performance helping organization to use its financial and human resources in the process of creating value.

Source: Kaufman and Schneider (2004, table 2)

Human capital

According to Bontis et al. (2002), human capital is defined as the skills, knowledge and experience of individual employees within an organization. Bontis (1998) has defined human capital as the collective capabilities of an organization in extracting the best solutions using the knowledge of its individuals; also according to Bontis (1999), human capital as a source of innovation and strategic renovation is very important for organizations. Roos et al, (1997) believe that intellectual capital is obtained through the competence, attitude and intellectual agility of employees. Here, the competence refers to the skills and educations of employees as well as attitude is considered as a behavioral component of employees' work. Intellectual agility enables employees to change their procedures and thoughts regarding the innovative approaches in problem solving process.

Brooking also believes that human assets of an organization include skills, expertise, problem-solving ability, and leadership practices. According to Chen et al. (2004), human capital as the basis of intellectual capital includes the factors (such as knowledge, skills, capabilities and attitudes of employees) leading to improvement of clients' expected performance and company's profitability. In fact, they believe that each employee has a type of skills and knowledge which are an integral part of that employee's mind; if the knowledge and skills are not activated, the employee cannot be used to create value for organization. Although the most important asset of a learning organization is its employees, they cannot be owned by the organization for ever (Stewart, 1997). Despite the growing importance of human capital, the amounts spent on development of human resources are still reported as ongoing expense, not capital costs, in financial statements according to the traditional procedure of most organizations (Roslender, 1997; Johnson et al., 1998). Therefore, one of the serious consequences of traditional reporting is to motivate organizations to reduce the amount of investment in education and human resources development.

Structural/organizational capital

Yundet (2000) defines organizational capital as institutionalized knowledge owned by an organization. Such capital can be manifested in the form of databases, instructions, and so forth. Sometimes the term “structural capital” is applied instead of organizational capital. Anyhow, Yundet believes that the word “organizational” obviously describes that the knowledge is owned by the organization; as a result, the term “organizational capital” is more appropriate. Structural capital includes all non-human sources of knowledge such as strategies, databases, organizational charts, operating procedures, performances, and anything that is valuable to the organization (Roos et al., 1997). They also believe that structural capital can include whatever is left in the organizations after leaving the employees. According to Roos et al. (1997), structural capital includes organizational capital (such as intellectual assets, innovation, processes and cultural assets) along with renovation and development capital (such as patent rights of products and educational efforts). In addition, Brooking believes that structural capital has several infrastructural assets such as technologies, processes, and working methods as well as intellectual assets such as technical knowledge, trademarks and patent rights of products. According to Stewart, the structural capital is defined as the knowledge used for information technology, patent rights of products, trademarks, and designs. Chen et al. (2004) believe that structural capital refers to system, structure, and ongoing business procedures in an organization. They also believe that structural capital can be classified in the form of organizational culture, organizational learning, operational processes, and information systems. According to Bontis (1998), in an organization with poor systems and procedures, intellectual capital cannot achieve its maximum potential abilities.

Structural capital can create a strong, supportive culture that enables employees to safely and without any fear enter into new arena and gain experience. Also, structural capital can be a valuable aid to employees to achieve optimal intellectual performance and realize the organization’s business performance. In fact, structural capital is a function of human capital, because human capital is considered as a determining factor in shaping the organizational structure of an organization. On the other hand, once structural capital is affected by human capital, it can be manifested clearly while it is independent of human capital. For example, organizational structure and culture can independently have a fundamental impact on the organization; therefore, structural and human capital can highly help organizations through interaction with each other. Actually, the customer capital is formed and evolves through coordination between these two types of capital (Chen et al., 2004).

Customer capital/relational capital

Brooking (1996) believes that market assets include customers, their loyalty, and distribution channels which are related to customer capital. According to Stewart, customer capital is to attract and retain customers using market information; in other words, customer capital is the potential ability obtained by an organization through external, intangible factors. Although the term “customer capital” was firstly introduced by Hubert Saint-Onge, its concept was developed to “relational capital” by emerging new definitions over time. The new concept includes the knowledge hidden in all relations that are made by organization with customers, competitors, suppliers, unions, and government (Bontis, 1999). According to Roos et al. (1997), relational capital includes the relation of organization with external and internal beneficiaries. Also, market orientation which is related to customers is considered as an obvious sign of relational capital. According to Kohli and Jaworski (1990), market orientation is defined as creating market

intelligence at different organizational levels regarding the current and future needs of customers. Market intelligence should be expanded horizontally and vertically within the organization so that the different levels of the organization can timely and properly respond to changes in the market (Bontis, 1999).

Totally, customer capital, as a bridge and connector in the process of intellectual capital, is a determining factor in converting intellectual capital to market value and as a result, the business performance of the organization. Without customer capital, the market value or the business performance of the organization cannot be achieved. Therefore, the growth of customer capital depends on supporting human and structural capital (Chen et al., 2004).

Organizational intelligence

Organizational intelligence as a combination of knowledge and skills of the organization's assets can be used to achieve the organizational goals. In fact, organizational intelligence can be defined as the comprehensive knowledge of all factors affecting the organization. In other words, it is the totality and integrity of information, experience, knowledge, and understanding of organizational issues. Also, the organizational intelligence can be defined as the ability of an organization in solving organizational problems. Successful organizations have achieved collective intelligence through merging individual intelligence of employees. This collective intelligence is also called organizational intelligence.

Synergy is a factor increasing the efficiency of organizational intelligence as a whole compared to its constituent parts (the individual intelligence). Individual intelligence can be changed due to traditional psychological states, but the collective intelligence is changed by cultural structures and equipped or restricted by social culture (Yals, 2005). Regarding organizational intelligence, Karl Albrecht believes that the most serious responsibility of today's organizations is to attract and retain smart people.

There are different perspectives on organizational intelligence that two of the most important ones are mentioned below:

Organizational intelligence based on Matsuda's view

According to Matsuda, organizational intelligence includes all mental abilities of an organization and is obtained from combination of two factors "human and machine intelligence". In fact, Matsuda believes that organizational intelligence consists of two parts, organizational intelligence as a process and organizational intelligence as a product. Organizational intelligence as a process includes theoretical analyses along with a set of sub-processes and is described by characteristics such as interaction, consensus, or cooperation; but organizational intelligence as a product includes policy mix and guidelines for the design of information systems. However, these two components are not separated and act as two interdependent factors in an organization.

Organizational intelligence based on William Halal's view

According to William Halal (1998), organizational intelligence means the capacity of an organization to create and use knowledge for strategic adaptation to the environment or market. Organizational intelligence known as Organizational IQ is something like IQ and formed at the enterprise level. Organizational intelligence can be measured as IQ. If an organization lacks leadership, efficient and environmental strategies, it cannot benefit its intelligence to achieve success; in such circumstances, the organization can hardly understand the implementation and evaluation of theories such as organizational learning and intangible assets; also, they cannot find out these theories relation with performance or their development approach. According to William Halal et al., organizational intelligence is a function of five cognitive subsystems

including organizational structure, culture, beneficiaries' relationships, knowledge management, and strategic processes (Lie Bowitz, 2000).

Knowledge-based organizations

The organizations or institutions that are active in the fields of “development and application of inventions” and “commercialization of research and development results (including design and production of goods and services) in high technologies with high value-added” are considered as knowledge-based organizations or institutions. In fact, knowledge is a series of theoretical, practical, technical, and experimental findings of human. Throughout the history, different assets such as land, hardware equipment, natural resources, and information have formed the essence of human business. Today, it is knowledge that makes up the essence of the companies and the level of companies' competition is determined by the level and type of knowledge. In simple terms, today's companies get rich through the acquisition of knowledge. However, it should be noted that not any knowledge is good and useful for companies. Knowledge must be applied, or according to experts, commercialized. The knowledge commercialization refers to converting knowledge into a market-friendly format that there is a demand for it in the market.

The relationship between intellectual capital and organizational intelligence

According to Jung (2009) and based on the new scientific framework, organizational intelligence management includes four elements as organizational process, intellectual capital, organizational cognitive power, and performance characteristics. Jung, as other experts, also believes that intellectual capital consists of three elements “human capital”, “relational capital”, and “organizational capital”. Organizational intelligence focuses on knowledge and includes concepts such as organizational learning and knowledge management.

Dellutri believes that organizational intelligence consists of three interrelated concepts as intellectual purpose, characteristics, and activities. Intellectual purpose is associated with organizational vision. Intellectual characteristics permit the identification of vision and intellectual activities can timely and properly reveal and illustrate development programs. Organizational intelligence is the structured and activated knowledge; in other words, organizational intelligence is the ability of an organization in solving organizational problems. According to Albrecht, the organization's success depends on three factors including smart individuals, teams, and organizations. According to the mentioned issues, it is concluded that there is a close relationship between organizational intelligence and knowledge (knowledge capital); however, most definitions of organizational intelligence indicate the importance of knowledge as well; for example, Albrecht has mentioned knowledge as the most important dimension among the seven dimensions that is proposed for organizational intelligence.

The research model

According to the theoretical framework provided by Jung (2009), intellectual capital is considered as an organizational intelligence element. According to the results of studies done by Satari G., all components of intellectual capital can significantly predict organizational intelligence. Actually, the findings introduce the components through which the organizational intelligence can be enhanced; in other words, organizations can expect collective stupidity to be reduced and organizational intelligence increase through investing in the three components of intellectual capital. Also, their research showed that there is a close relation between organizational intelligence and structural capital.

Table 2: the three main components of organizational intelligence in relation to the three components of intellectual capital

Relational intelligence (relational capital)	Structural intelligence (structural capital)
1- employee-employee relations	1- customer-information structure
2- customer-employee relations	2- processes-customer structure
3- employee -competitor relations	3- customer-services/product structure
4- employee -partner relations	4- customer-technology structure
5- customer- customer relations	5- competitor-information structure
6- customer- competitor relations	6- competitor-processes structure
7- customer-partner relations	7- competitor- services/customer structure
8- competitor-competitor relations	8- competitor- technology structure
9- competitor- partner relations	9- information-processes structure
10- partner-partner relations	10- information-processes structure
Competency intelligence (human capital)	11- information- services/product structure
1- employee-information competence	12- information- technology structure
2- employee-processes competence	13- information- technology structure
3- employee- services/product competence	14- processes -processes structure
4- partner-information competence	15- processes - services/product structure
5- partner- processes competence	16- services/product - services/product structure
6- partner- services/product competence	17- product - services/ technology structure
7- partner- technology competence	18- technology - technology structure

Source: (Mirkamaly, 2010)

The research objectives

- To study the relationship between human capital and organizational intelligence in knowledge-based organizations.
- To study the relationship between relational capital and organizational intelligence in knowledge-based organizations.
- To study the relationship between structural capital and organizational intelligence in knowledge-based organizations.

The research hypotheses

- There is relationship between human capital and organizational intelligence in knowledge-based organizations.
- There is relationship between relational capital and organizational intelligence in knowledge-based organizations.
- There is relationship between structural capital and organizational intelligence in knowledge-based organizations.

Research Methodology

This study is a descriptive (correlational)-survey research and the research population includes all educational institutions in Tehran-Iran. The size of sample has been determined equal to 200 people using random cluster sampling method. Pearson correlation coefficients and analysis of variances have been used to analyze data. The 49-item Albrecht’s questionnaire has been used to assess organizational intelligence. The questionnaire items have been developed based on components of strategic vision, shared fate, willingness to change, the courage, unity and

consensus, knowledge application, and performance pressure. The 52-item Bontis’s questionnaire has been used to assess intellectual capital. The questions of questionnaire have been developed based on closed format and the quintuple Likert scale (1- very low, 2- low, 3- medium, 4- high, and 5- very high). Also, due to the similarity of some questions, the number of questions has been reduced to 42. This questionnaire measures human capital, structural capital, and relational (customer) capital. The data have been analyzed using SPSS software.

Data analysis

The results of variables descriptive statistics

Table 3 shows the results obtained from descriptive statistics of variables.

Table 3: the results of variables descriptive statistics

Variables	Number	Mean	Standard deviation
Human capital	200	3.01	1.23
Organizational intelligence	200	3.84	0.457
Relational capital	200	3.30	0.534
Structural capital	200	3.34	0.524

The evaluation of research hypotheses

- **The first hypothesis:** there is relation between human capital and organizational intelligence in knowledge-based organizations.

H_0 : There is no significant and positive relation between human capital and organizational intelligence in knowledge-based organizations.

H_1 : There is a significant and positive relation between human capital and organizational intelligence in knowledge-based organizations.

Spearman correlation test was used to evaluate this hypothesis. Table 4 shows the results of this evaluation

Table 4: the results of Spearman correlation test related to first hypothesis

The intelligence in knowledge-based organizations		
0.86	Spearman correlation coefficient	Human capital
0.001	The significance level	
200	N	

According to table 4, the value of significance level is reported equal to 0.001 which is lower than the value of alpha test (0.05); hence, the researcher’s hypothesis is confirmed. So, there is a significant and positive relation between human capital and organizational intelligence in knowledge-based organizations. Also, the relation is strong and positive, because the value of correlation is reported equal to 0.86.

- **The second hypothesis:** There is relationship between relational capital and organizational intelligence in knowledge-based organizations.

H_0 : There is no significant and positive relation between relational capital and organizational intelligence in knowledge-based organizations.

H_1 : There is a significant and positive relation between relational capital and organizational intelligence in knowledge-based organizations.

Spearman correlation test was used to evaluate this hypothesis. Table 5 shows the results of this evaluation

Table 5: the results of Spearman correlation test related to second hypothesis

The intelligence in knowledge-based organizations	
0.78	Spearman correlation coefficient Relational capital
0.003	The significance level
200	N

According to table 5, the value of significance level is reported equal to 0.003 which is lower than the value of alpha test (0.05); hence, the researcher’s hypothesis is confirmed. So, there is a significant and positive relation between relational capital and organizational intelligence in knowledge-based organizations. Also, the relation is strong and positive, because the value of correlation is reported equal to 0.78.

- **The third hypothesis:** There is relationship between structural capital and organizational intelligence in knowledge-based organizations.

H_0 : There is no significant and positive relation between structural capital and organizational intelligence in knowledge-based organizations.

H_1 : There is a significant and positive relation between structural capital and organizational intelligence in knowledge-based organizations.

Spearman correlation test was used to evaluate this hypothesis. Table 6 shows the results of this evaluation

Table 6: the results of Spearman correlation test related to third hypothesis

The intelligence in knowledge-based organizations	
0.65	Spearman correlation coefficient Structural capital
0.007	The significance level
200	N

According to table 6, the value of significance level is reported equal to 0.007 which is lower than the value of alpha test (0.05); hence, the researcher’s hypothesis is confirmed. So, there is a significant and positive relation between structural capital and organizational intelligence in knowledge-based organizations.

Also, the relation is strong and positive, because the value of correlation is reported equal to 0.65. To study the significance of multiple regressions, the analysis of variances was used. The null hypothesis was developed as follows:

H_0 : The regression is not significant.

H_1 : The regression is significant.

Table 7: the results of regression

Model		Sum of squares	Freedom degree	Mean squares	F-statistic	The level of significance
1	Regression	7.77	1	7.77	128.21	0.000

	The residual	12.00	198	0.61		
	Total	19.77	199			

According to table 7 and the value of f-statistic, it is concluded that at least one of the independent variables affects the prediction of the dependent variable. Also, since the value of significance level is 0.000 which is lower than 0.05, then the null hypothesis is rejected at 95% confidence level; in other words, the regression is significant. Therefore, there is a significant relation between at least one of independent variables (and its indicators) and intelligence in knowledge-based organizations. Table 8 shows the linear relation and the regression line equation.

Table 8: the regression line equation

Model	Uncorrected regression coefficients		Uncorrected regression coefficients	t-statistic	The significance level
	β	The standard deviation	β		
Constant value	12.38	0.60		5.38	0.003
Human capital	0.75	0.24	0.62	0.82	0.008
Relational capital	0.52	0.25	0.42	75.55	0.001
Structural capital	0.42	0.43	0.38	65.58	0.000

According to table 8, there is a relation between “human, relational, and structural capital” and “intelligence” in knowledge-based organizations. The values of β coefficients show that a unit change in human capital, relational capital, and structural capital respectively causes 62%, 42%, and 38% change in intelligence in knowledge-based organizations.

Conclusion

In today's world, there are new ways to access, store, and distribute information. Information technology has caused many changes in organizations and business environment and provided concepts such as organizational intelligence and intellectual capital in organization and management science. In fact, identification, evaluation, reporting, and understanding of these factors can help organization to gain a competitive advantage. In today's business environment, organizations are successful that maintain and improve organizational intelligence through investing in intellectual assets. Knowledge-based organizations play an essential role in converting knowledge into new business and jobs. Actually, if the companies do not organize their business based on knowledge, they have to follow traditional methods of trade.

Intellectual capital is known as a subset of organizational intelligence and its sub-structures are in relation with organizational intelligence sub-structures. As a result, a constructive relation should be made between the elements of intellectual capital and organizational intelligence to gain a competitive advantage.

In recent years, good initiatives have been made in the field of knowledge-based organizations development. In order to more accurately assess the status of intellectual capital and organizational intelligence, it is suggested to study the components and sub-components of organizational intelligence which enhance organizational intelligence and increase the efficiency

and effectiveness of knowledge-based organizations. To achieve the goal, it is necessary more scientific research to be performed in scientific centers. Also, it is suggested to prepare appropriate conditions to gain practical experiences leading to a change in the attitude of individuals and organizations. In addition, financial support is needed for promoting knowledge management and organizational intelligence in knowledge-based organizations.

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