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Study of effect of intellectual capital's dimensions on the organizational productivity: Case study of organization of education of Mazandaran province, Iran

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The purpose for this research was to assess the significance of the relationship between the triple dimensions of the intellectual capital; that is, human capital, structural capital and relational capital with the productivity of the organization of the ministry of Education, in Mazandaran province. Undoubtedly, competition and competitiveness are the inseparable parts of institutes and organizations in the economy. One of the basic ways by which organizations are to be successful to correct the production, present the services and gain the capability of the competition with other organization is identification, support and correct management of the intellectual capitals. Research is descriptive– analytical one and the statistical society consists of 30 offices of the organization of the Ministry of Education of the Mazandaran province and the statistical sample includes employees from amongst 28 offices. In order to collect the data, the psychometric questionnaire, which its original copy was prepared and implemented in Canada, has been used. In order to estimate the reliability of the questionnaire, Cronbach alpha technique has been used. The Cronbach alpha coefficient for the variables of productivity is 84.2% and the total Cronbach alpha coefficient for the variables of the intellectual capital's dimensions is 86.9. The findings of the research show that the intellectual capital is in moderate limit in the mentioned organization and there exists a positive and significant correlation between the dimensions of intellectual capital, productivity of the organization, management of the intellectual capital increases and improve the overall productivity of organization.

Key words: Intellectual capital, human capital, structural capital, relational capital, productivity.

INTRODUCTION

Revolution and information technology, formation of the informational and networking and also, technology, especially in the domain of communication, computer and engineering, have caused the growth model of the global economy to be changed basically.

As a result of these changes and transformations, the knowledge as the most significant capital has been replaced with the financial and physical capitals in the global economy. In the knowledge – based economy, organizations live and die on the basis of knowledge and

the most successful organizations are those which use these intangible assets in the better and faster manner.

Today, the knowledge, compared to other agents of the production, including the land capital, work force, machineries, etc has been benefitted from more preference. So that, the knowledge is regarded as the most important factor of production in knowledge based economy and reminded as the most significant advantage of the organizations (Chen et al., 2004). In the based knowledge economy, changes have been occurring due to different reasons, including globalization, international and multi-national competition with the aware customers, competitors and powerful suppliers (Pablos, 2003). So, today, knowledge is reminded as the

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raw/primitive material of economy and its most important consequence (Bukheetal, 2001). The creating course of the intellectual capital has become an exciting subject both for researches and for those who are involved in the organizational affairs. From the strategic view point, the intellectual capital can be used to create and apply the knowledge to increase the value of the organization (Roos et al., 1997). The intellectual capital which refers to the valuable, intangible and unique resource for value creation has attracted itself the attention of the private organizations since 1990 and taken into the consideration by the governmental organization overtime. The diversified researches have been carried out as well, in order to identify, measure, manage and report, in the governmental organizations such as hospitals, cultural institute, regional and local governments, universities and researching centers (Ramirez, 2007). In this direction, studies have been implemented by various companies, including "Canadian financial post" having 300 companies and "U.S. fortune" possessing 500 companies, suggesting that they put much emphasis on for the identification and management of the intangible assets or intellectual capital (Abeysekra, 2006). Because they believe that those who are rich from the view point of the knowledge assets and the intellectual capital reach the high levels of the growth and development (Malhoutera and you kesh, 2007).

On the other hand, Houseman and Goodman (1999) who conducted a study in more than 200 companies in the United States of America reached this conclusion that more than half of them have taken action to use the new methods of measurement which put emphasis on the nontraditional capitals' value, including human and customer capital (Sullivan, 2006). Because they believe that the intellectual capital allows the organizations to gain more profit through the products, services, business processes and new organizational structure (Sulivan, 2006; Schiuma, 2008).

Therefore, through the study and consideration of the intellectual capitals and their dimensions; that is, human capital, structural capital and consumer capital, in the organization of the Ministry of Education, as one of the important organizations of the country and the effect of this capital on the productivity, the current article takes steps to put emphasis more on the necessity of reassessment of organizations in their outlook at the manner of intellectual capital. The main question of the current research is that: Is there a significant relationship between the dimensions of the intellectual capital (human capital, structural capital and relational capital) and productivity of the organization of Mazandaran Province's Ministry of Education.

Background of the research

John Kenneth Galbraith, the economist, used the term

"Intellectual capital" for the first time in 1969. But, its new application traces back to as early as 1990. For this reason, a definition which is to be admitted by everybody has not been presented up to now (Jorgensen, 2008). And each one of the knowledgeable individuals of this domain has presented the various definitions by the diversified objectives and biases to which the most important out of them are referred (Choong, 2008).

The intellectual capital of an organization is the mental intangible assets and resources which the organizations deal with the value creation through converting them into the new processes of the commodity and services (Feiwal, 1975).

Roos et al. (1997) consider the intellectual capital all processes and assets which do not appear and rise in the balance sheet usually. This classification embraces all intangible assets such as trademarks and copy rights which are to be studied by the modern accounting methods. Stewart regards the intellectual capital as information, intellectual / spiritual and trading ownership which is to be used to produce the wealth (Stewart, 1997). Edvinsson and Sullivan have defined the intellectual capital as a knowledge which can be turned into value and introduce it as the scientific experiences of the organizational technology, relationships with customer and professional skills in order to gain access to the competitive advantages (Edinsson and Sullivan, 1996). From the Bontis's view point, the intellectual capital is an individual and organizational knowledge which assists sustainable competitive advantages (Bontis, 2000). This capital acts under the principles of the frequency's economy; that is, through more use, not only its value is not reduced, but also its value will be increased too. Totally, intellectual capital is similar to the body muscles which if they are not used, they will be lost (Cohen et al., 1993).

Kazem and Crippss (2006) believe that the intellectual capital is the main motive / dynamic and sustainable force of the organizational operation which reflects the real value of the organization better than everything (Kazem and Crippss, 2006). With regard to the definitions presented by the connoisseurs / clear – sighted persons, we reach the similar words such as knowledge, skills, processes and value creation; in fact, the intellectual capital consists of the special and organized information which an organization can use in order to achieve its goals (Chen, 2007).

In an article under the title of "research in the value and efficiency of the intellectual capital", kujansivu and Lonngvist (2007) express that the intellectual capital is very important for the competitiveness of the institutes, it has more importance for the knowledge – based institutions because most of their resources consist of the intangible assets (Kujansivu and Lonngvist, 2007). In the article of capability and effectiveness of the intellectual capital regarding the half – conductive producer companies, Lu et al. (2009) discuss about the

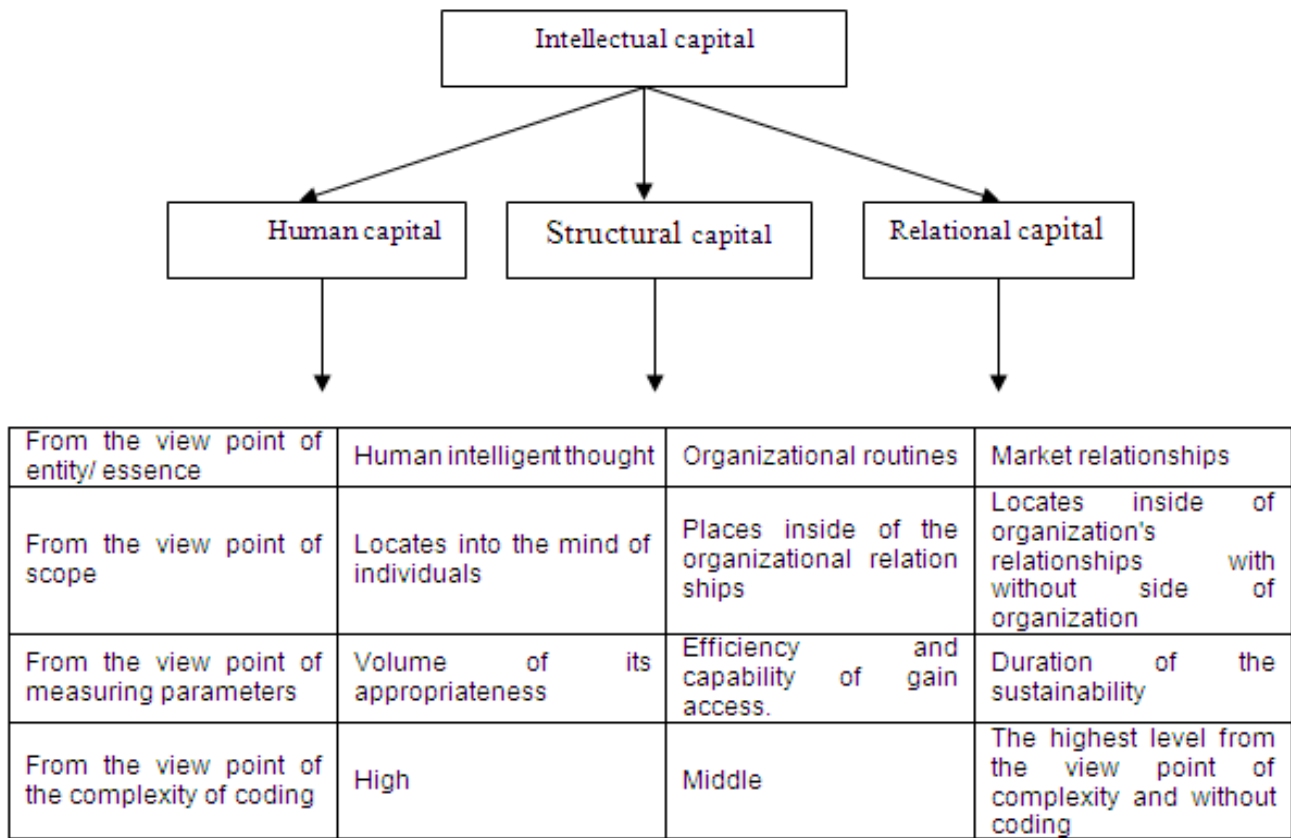


Figure 1. Conceptualization of the intellectual capital from Bontis's view point.

significance of increasing the value of a company through the management of the intellectual capital in the severe environment. Using the non-parametric method, the covering analysis of the data has reached this conclusion that the operation of the intellectual capital must be construed as a key element of gaining access to more innovation and acquiring the competitive advent ages.

In the article of "the empirical effect of the unity and intellectual capital on value creation of the international strategic unities", Shao-Chichang et al. (2002) on the basis of a sample from the institutes of the United States investigated the effect of the intellectual capital and the experience of the unity and reaction of them on each other and on the value creation of the international strategic unities and reached this conclusion that the institutes which are of the higher level of the intellectual capital acquire more profits. Also, there exists a positive and significant reaction between the intellectual capital and experience of the unity (Cheng et al., 2009).

Because of extension of the concept of intellectual capital, the researchers worked in this scope have, each of them, presented their own particular classifications. The first classification was implemented in three domains by Sveiby in 1997:

- 1) Human capital in the domain of the individual competence,
- 2) Structural capital in the domain of the internal/domestic structure,
- 3) Relational capital in the domain of the external/foreign structure (Sveiby, 1997).

This classification had been admitted until later, Bontis corrected and expanded it. Bontis replaced the customer capital with the relational capital and dealt with studying the intellectual capital. The classification presented by Bontis is shown in Figure 1 (Bontis, 1998).

Human capital is the reservoir of the organization's knowledge which is to be embodied in the employees of the organization. Ross et al. (1997) attribute the human capital to the competence, outlook and brightness of the employees. Competence includes the skill and training / instruction. Brightness also involves the behavioral components of the employees. Although, employees are raised as the most important organizational asset, organization can not consider it as its own property. (Ross et al., 1997) Edvinsson and Malone (1997) define the human capital as the combined knowledge skill, creativity and individual capability of the employees in the

accomplishment of the duty / function. Bontis (1998) describes the human capital as the collective capability of the organization to extract the best solutions from the knowledge of its individuals.

Management of the intellectual capital in the organizations

Today, implementation of the management system of the effective knowledge is one of the key factors in the improvement of the business processes and, similarly, development of the intellectual capital of the organizations. Because one of the most important functions of managing the intellectual capital is to form the processes of value creation and value acquisition from the knowledge (Kharandkar et al., 2009).

Management of this strategic capital for the competitiveness of organizations has turned into a vital affair (March, 2003). Not only management of the intellectual capital searches for defining the stock and reservoir of the organizational knowledge and measuring it appropriately, but also it seeks for controlling and directing the knowledge current in different levels of the organization in order to improve and promote the performance (Arbabshirvani et al., 2007). Shiuma and Lerro (2008) define the management of the intellectual capital as "an umbrella activity" which is focused on the identification, measurement, control and development of the intangible resources (Shiuma and Lerro, 2008). Carlucci and Schiuman (2005), in order to perceive better the various aspects of the management of the intellectual capital, of the management of the intellectual capital, have divided it into three strategic, administrative/managerial, operational/executive levels. The strategic view point embraces the approaches which show paying attention to the strategic importance of knowledge and its management in the strategic regulation of the organization.

The mentioned view point is on the basis of three (resource – based), (competence – based) and, more generally, ((knowledge based)) viewpoints.

In the strategic view point, the intellectual capital is used in order to create and use the knowledge aiming at value creation in the organization and the acquisition of success is considered owing to the intellectual capital and ability of management of the this rare resource (Petty and Guthery, 2000).

The managerial view point consists of the approaches and methods for the evaluation and management of knowledge. In this view point, two main currents of the knowledge development and knowledge evaluation can be identified. Development of the knowledge is based on the approaches and tools in order to identify, classify and evaluation of the intra organizational knowledge (Schiuman and Lerro, 2008).

At the end, the managerial view point refers to a

collection of the organizational and managerial activities and projects, including the team work and optimization in the direction of the development and usage of the knowledge.

Despite the significance of the management of this strategic capital, most organizations use very little from their own intellectual resources. They may use the construction license maximally, yet, for example, it is possible that they do not use enough from the skills allocating to the employees (Peroset et al., 2006).

Many theorists and researchers, in the description of the attributes of the new economical space, believe that the form of the economy has assumed itself a global and epidemic shape and formed from the intangible, complicate, and invisible assets which have been spun in each other. In such a space, productivity and competitive advantage of the institutes are to be pawned in the production capacity, processing and effective knowledge application which has appeared in the global scope. In this scope, the main activities of the institute, whether directly or through the net works perform in the through relationship among the economical factors and in the global scale. In fact, production or service – giving of the new economical organization is put in the pawn of the acquisition processes and processing of the knowledge and data resources and the tools connected to this process. They are the processes and tools which provide the basis of increasing the productivity and the economical advancement. On the basis of this definition, it is evident clearly that management, planning and super vision on the identification, allocation and assessment of the invisible or intangible assets and intellectual capital of the institutions are important indexes in the determination of the competitive ability of institutes and organizations in order to survive and growing the new economy (Khavandkar et al., 2009).

Rooss et al. (1997) consider the management of the intellectual capitals as five interconnected steps (Figure 2):

- a) Identification of the key intellectual capitals which lead to the achievement of the performance in the strategy of organization.
- b) Visualization and picture-making of the paths and transformations/changes of the value creation of the intellectual capitals of the organizations.
- c) Measurement of the changes/transformations resulting from the intellectual capital in the performance.
- d) Education/rearing of creating the key intellectual capitals using the processes of the knowledge management.
- e) The external and internal reporting of the performance.

There exists a major agreement in connection with the principal objectives of the knowledge of management in identifying the pursuit of individual and collective knowledge in the organization in order to reach the most

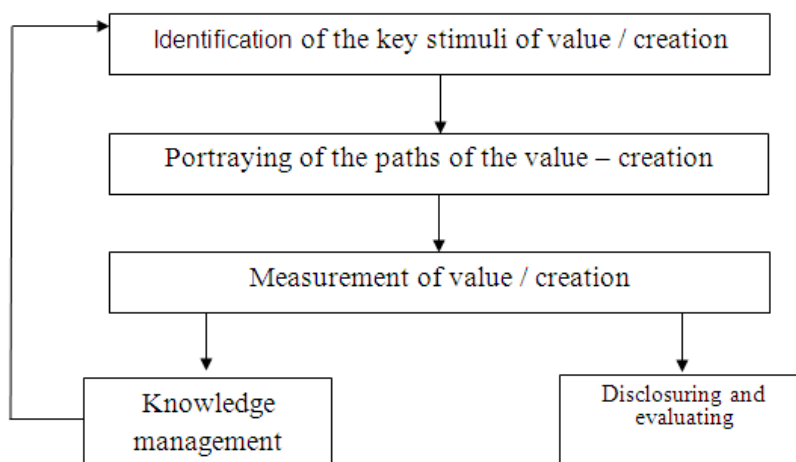


Figure 2. Management of intellectual capitals.

significant pursuit of knowledge management. On the other hand, the aim of applying the knowledge management in the development of the intellectual capital can be considered in the expansion of the possibility and capability of the individuals in the innovation, cooperation and efficient decision – making and improvement and expansion of the products and services in the organization. In the better words, promotion of organization's capability in order to perform its own main processes more effectively is the creation of more added value through the channel of the knowledge in the organization.

Thus, the successful organizations are those which distribute extensively the new knowledge, including a combined collection of the employees, processes, procedures, reference net works, technologies and products and employ them swiftly.

This process will lead to the much more development and improvement of the intellectual capital level of the organization, reinforcement of the knowledge foundations and at the end, valued added creation for organization (Khav and Kar et al., 2009). Because the improvement of the productivity in the organizations depends on the employees of the organization, notification of them regarding the productivity, creation of the opportunities for the participation of employees in the process of decision – making and negotiation about promotion of the productivity and sharing in the profits resulting from it and the perception of the employees from the policies of the government have effect on the productivity to tally. In fact, improvement of the productivity is possible through the good relationships and participation of the employees in the organizations (Procopenco, 2001).

In the discussion of the knowledge assets, Bontis and Serinko, (2004) suggested a frame work of both two scientific and empirical aspects, dimensions of the intellectual capital and its effects on the organizational

productivity through a preliminary research in Canada in 2004. The results of the research of Bontis and Serinko (2004) provided a few sustainable concepts for next studies. This model was applied to the sample of new data repeatedly. For this reason, it reinforces the scientific condition of the repeatability. Also, it consolidates more the attribute of depending on the being identical or symmetric (analogous) and relationship between the dimensions of the intellectual capital and organizational productivity.

Conceptual model of the research

On the basis of the theoretical studies, this research has been designed basically based upon the theories of Bontis et al. (2000) as well as the joint research of Bontis and Serinko (2004) in the relationship of the intellectual capital with productivity. Based on this model, hypotheses of the research have been compiled (Figure 3).

Hypotheses of the research

- 1) There is a significant relationship between the dimensions of the intellectual capital and the productivity of organization of the Ministry of Education of the Mazandaran province,
- 2) There is a significant relationship between the human capital and productivity of the organization of Ministry of Education of the Mazandaran province,
- 3) There is a significant relationship between the structural capital and productivity of the organization of Ministry of Education of the Mazandaran province,
- 4) There is a significant relationship between the relational capital and productivity of the organization of

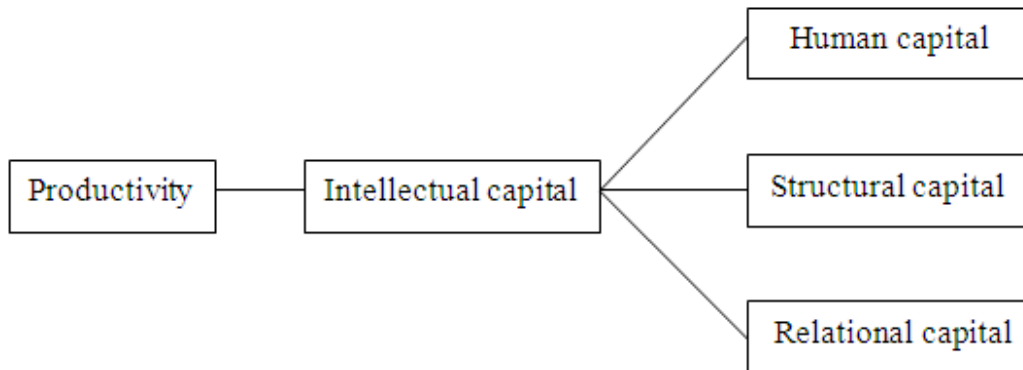


Figure 3. Relationship between the dimensions of the intellectual capital and organizational productivity. (Bontis and Serinko, 2004).

Ministry of Education of the Mazandaran province.

MATERIALS AND METHODS

In this research, method of search/methodology is descriptive – analytical as well as applied one from the objective's point of view, and it describe and analyze the existing situation of the variables of the intellectual capital and productivity and also the relationship between two variables of the intellectual capital and productivity in the organization of Ministry of Education of the Mazandaran province. The statistical society of the current research consists of 30 offices from amongst organization of Ministry of Education of the Mazandaran province which the sampling technique has been used considering its high volume. In this research, despite the aging, occupational and sexual differences and experience of the employees, the equal selection was given to each one probability. In order specify the sample volume using the Morgan's table; the simple random sampling was used. Since the number of the offices being dependent on the organization of the Ministry of Education of the Mazandaran province is 30, the employees of 28 offices have been sampled on the basis of Morgan's table and the original copy of the questionnaire (Bontis and Serinko, 2004) implemented in Canada has been applied. In this research, 500 questionnaires were distributed among the employees of 28 offices out of which 463 questionnaires have been analyzed.

In order to use this questionnaire, its dialects were translated into Persian and some corrections were carried out and the corrected questionnaire has 60 questions which include three humane, structural and customary capitals and productivity. In order to analyze the response, the five – degree Likert - type scales, which is regarded as one of the most common scales of measuring the closed responses, has been used Table 1.

After preparation of the indexes, we must be assured that they assess the same concept we want to measure. (Validity) and, also, we have to be sure that we can trust in responses given our questions; a question which, today, is responded in such a manner and, tomorrow, will be responded in another way will be a useless question (This is the same problem as reliability). In this research, the Chronbach also as a method has been used to determine the reliability of the test. This method applies to calculate the internal similarity of the measurement tool which measures the various features. According to the empirical rule, Alpha must be 70% or higher so that the scale can be regarded to have reliability. In this research, all variables, Alpha is higher than 70% Table 2.

RESULTS

In order to analyze the data resulting from the research, the method of the perceptive statistics (Pearson's correlation coefficient) has been used to determine the effect of independent variable on the dependent variable. In order to test the hypothesis of the research, the SPSS statistical software has been used which the obtained results are discussed as follows:

Hypothesis 1: There exists a significant relationship between the dimensions of the intellectual capital and productivity of the organization of Ministry of Education of Mazandaran province Table 3.

The correlation coefficient is significant in 5% level with regard to the results of the statistical test of this hypothesis, it can be said that, in the significance level of five percent, there is a positive and significant relationship between the intellectual capital with productivity of the organization of Ministry of Education of Mazandaran province. So, hypothesis 1 is confirmed in the confidence/ reliability level of 95%.

Hypothesis 2: There exists a significant relationship between the human capital and productivity of the organization of Ministry of Education of Mazandaran province Table 4.

Correlation coefficient is significant in level of 5% with regard to the results of the statistical tests of this hypothesis, it can be said that, in the significant level of 5%, there exists a positive and significant relationship between the human capital and / with productivity of organization of ministry of Education of Mazandaran province. Therefore, hypothesis 2 is confirmed in the reliability level of 95%.

Hypothesis 3: There exists a significant relationship

Table 1. A summary of the dialects of the questionnaire and how to code it / manner of its coding.

Human capital
H ₁ : The ideal level of competence – H ₂ : performance of the duties in the best manner H ₃ : advancement according to the time table – H ₄ : the comprehensive plan of the recruitment – H ₅ : dismissal of the employees – H ₆ : learning of the employees –H ₇ : Rate of the collaboration of employees – H ₈ : thinking before performing the task – H ₉ : effectiveness of the relationships among the working groups H ₁₀ : Raising of the new ideas – H ₁₁ : Improvement and development of the employees 'skill – H ₁₂ : freedom of expression – H ₁₃ : sagacity intelligence and creativity – H ₁₄ : output of the employees – H ₁₅ : The collective effort in order to gain access to objectives. H ₁₆ : Occupational satisfaction of employees.
Structural capital
S ₁ : low cost of work performance – S ₂ : Implement of the novel ideas- S ₃ : Reduction of cost in return for each unit-S ₄ : Support of the new ideas- S ₅ : Increase of income through the increase of number- S ₆ : Knowledge sharing – S ₇ : Increase of the efficiency of the organization –S ₈ : Gaining access to the available information – S ₉ : Time of the work performance – S ₁₀ : Support of the creativity and innovation – S ₁₁ : Lack of existence of Bureaucracy – S ₁₂ : facilitate organizational structure – S ₁₃ : Supporting organizational culture – S ₁₄ : Revenue of the organization's individuals.
Relational capital
C ₁ : Satisfaction of the clients with organization C ₂ : Investment to procure the needs – S ₃ : Paying attention to the clients' needs – C ₄ : Awareness of all sections of the organization from the needs of the clients – C ₅ : Continuation of the organization's relationship with clients – C ₆ : Market share from the afore-said services –C ₇ : Feedback in organization – C ₈ : The long-term relationships of the organization with the clients –C ₉ : Commitments of the organization towards the suppliers. C ₁₀ -Presentation of the services with high added-value – C ₁₁ : Honest response to the questions of clients – C ₁₂ : Loyalty of the clients to organization – C ₁₃ : equitableness of the contracts for the suppliers – C ₁₄ : Recognition of the target markets (Higher Education centers)
Productivity
P ₁ : qualitative improvement of work force –P ₂ : Increase of the investment in the administrative equipments and tools. P ₃ : The correct performance of the works –P ₄ : Economizing from(in) budget – P ₅ : Change in the administrative equipments and facilities – P ₆ : Optimum usage of resources – P ₇ : Understanding among managers and employees – P ₈ : Organizational structure and efficient system – P ₉ : Necessity of reforming the workspace – P ₁₀ : Managerial strategies – P ₁₁ : Managerial factors – P ₁₂ : Training– P ₁₃ : A study of the weak and strong points – P ₁₄ : Paying attention to the long term and short term objectives – P ₁₅ : Accomplishment of the activities according to the standard – P ₁₆ : Promotion of the intellectual level of the employees – P ₁₇ : Organizing and paying attention to the quality of the personnel (Bentis and Serinko, 2004: 192)

Table 2. Cronbach alpha coefficient for the variables of the questionnaire.

Variable	Cronbach alpha (%)
Productivity	2.84
Human capital	2.73
Structural capital	2.71
Relational capital	2.72
Total of Cronbach Alpha of intellectual capital	2.86

Table 3. A summary of the results of testing the Pearson correlation coefficient related to hypothesis one.

		Productivity	Intellectual capital
Productivity	Pearson correlation	1	4.47%
	Significance level (2)		11%
	Sample	28	28
Intellectual capital	Pearson correlation	4.47%	1
	Significance level (2)	11%	
	Sample	28	28

Table 4. A summary of the results of the test of the Pearson correlation coefficient related to hypothesis two.

		Productivity	Human capital
Productivity	Pearson correlation	1	39%
	Significance level (2) and continuation/sequence		4%
	Sample	28	28
Human capital	Pearson correlation	39%	1
	Significance level (2) and continuation/sequence	4%	
	Sample	28	28

Table 5. A summary of the results of the test of the Pearson correlation coefficient related to hypothesis 3.

		Productivity	Structural capital
Productivity	Pearson correlation	1	38 %
	Significance level (2) and continuation/sequence		46%
	Sample	28	28
Structural capital	Pearson correlation	38%	1
	Significance level (2) and continuation/sequence	46%	
	Sample	28	28

Correlation coefficient is significant in 5% level.

Table 6. A summary of the results of the test of the Pearson correlation coefficient related to hypothesis 4.

		Productivity	Relational capital
Productivity	Pearson correlation	1	8.46 %
	Significance level (2) and continuation/sequence		12%
	Sample	28	28
Relational capital	Pearson correlation	8.46%	1
	Significance level (2) and continuation/sequence	12%	
	Sample	28	28

between the structural capital and the productivity of organization of Ministry of Education of Mazandaran province Table 5.

Considering the results of the statistical tests of this hypothesis, it can be said that, in the significance level of five 5%, there exists a positive and significant relationship between the structural capital and/with the productivity of the organization of Ministry of Education of Mazandaran province. Thus, hypothesis 3 is confirmed in the reliability level of 95%.

Hypothesis 4: There exists a significant relationship between the relational capital and the productivity of the organization of Ministry of Education of the Mazandaran province Table 6.

Correlation coefficient is significant in level of 5% with

regard to the results of the statistical tests of this hypothesis, it can be said that, in the significance level of five percent, there is a positive and significant relationship between of the organization of Ministry of Education of Mazandaran province. Therefore, hypothesis 4 is confirmed in the confidence / reliability level of 95%.

The empirical studies in advanced industrial countries show that the increase of productivity has been resulted from the development of the managerial software systems more than the participation and the quantitative increase of the agents of the work and capital in the current of the production and services. Decrease of the productivity level which is the characteristic of the most and least developed countries results from the various factors affected the productivity which a number of these factors are out of control of these societies and some of them are remediable and control. It is exactly for this

reason that, today, all countries of the world search for gaining the progress in the field of the productivity; that is, they are able to gain access to more quantity of the production through the consumption of the less resources (Taheri, 2009).

Drucker (1999), stated that we are entering into a knowledge – based society in which the main economical resources are not capital, natural resources, work force and etc any more, but the main economical resources will be knowledge. 21st century is the century of the knowledge's economy. After the twentieth century which was the century of the Industrial economy, twenty one century will be the century of the knowledge's economy. In the Industrial economy, the factors of generating the economical wealth have been a series of the physical and tangible assets, including the land, work force, money, etc and the wealth was produced from the combination of these economical factors. In this economy, usage of the knowledge, as a production agent, has had a little role, but, in the knowledge based economy, knowledge or intellectual capital, as an agent of creating the wealth compared to other tangible and physical assets, will find more preference. In the knowledge – based economy, in spite of the industry - based economy, the intellectual assets and the human capitals in particular, are regarded as the most important assets of the organization and the potential success of the organizations originates from their thinking capability (Bathaei, 2006).

In 2004, Bontis and Sernko reached clearly to the relationship between two variables of the intellectual capital and productivity in their research in the Canada (Bontis and Sernko, 2004). Therefore, the manner of the management of the intellectual capital in the organizations and consideration of their productivity can play a noticeable role in the advancement/promotion of the organizational objectives. But, today, it becomes more evident that the injection of the infinite quantities of the physical and financial capital is not followed necessarily by the acceleration of the process of the growth and development of the countries. But, the countries which benefit from the powerful organizations and efficient administrative institutes and, at the same time, are of the effective and specialized skill human capital can absorb their physical and financial capital more appropriately and employ in the acceleration of the growth and development process. In the new economy, production of the wealth and economic growth originate from the intellectual intangible assets. A new economical progress puts emphasis on this fact that value creation is more dependent on the intangible assets rather than tangible assets (physical and financial). As a result, intellectual capital is regarded as the principal resource traditional factors of the production, including land, work force and financial capital place in the next rank of the importance. In such conditions, the intellectual capital is considered as the key agent of promoting the

organizational productivity. In the mean time, institutes and organizations in our country are not excluded from this rule and require using their own organization's intellectual capitals in order to be in the same direction with other organizations and increase the power of the competitiveness in the domestic and global arenas. The necessity of the outlook of the organizations at the intellectual capital is felt more than before, especially through the supervising membership of our country in the world trade organization in 2005 and increase of the competition the domestic economy and country's tendency to join to this international organization.

In the paper of " the effect of the dimensions of the intellectual capital on the productivity", Bontis and Sernko who conducted a joint research in Canada found that, after the collection and analysis of the data, the result of the research showed transparently that there exists a powerful, positive and significant relationship between the dimensions of the intellectual capital and productivity (Bontis and Sernko, 2004).

In an article under the topic of "the effect of the dimensions of the intellectual capital on the performance of the research's export in the Automobile Parts Industry of Turkey ", Muammar et al. (2008) confirm that the intellectual capital is a concept which suggests that incorporeal capital creates value more than the material/tangible capital. Therefore, the trading institute can create more value through extension of the employees' relationships, creativity and innovation. Following the determination of the effect of accumulating the intellectual capital of the institute on the exporting performance of the automobile parts industry of the Turkey, writers in the mentioned article surveyed 107 active institutes in this field and concluded that accumulation of the intellectual capital has great effect on the exporting performance of the institute. Their research showed clearly that the improvement of the exporting performance of the trading institutes which are of more accumulation of the intellectual capital in the aspects of the structural capital, human capital and customer capital is better compared to the institutes which lack such a capital (Zerenler et al., 2008).

Expulsion of the individuals can lead to the drop of the organization's memory; therefore, it is considered a threat for organization. Of course, it can be said from another angle that since the organization's forces become novel / new, the expulsion of the individuals can be considered useful; (Bontis, 2000). Brooking believes that the human asset of an organization includes the skills, expertise, ability of the problem solving and the leadership styles (Brooking, 1996). Chen and the colleagues believe that the human capital, as the basis of the intellectual capital, refers to the factors such as knowledge skill, capability and manner of construing which leads to the improvement of the performance (Chen et al., 2004).

Wistphl believes that human capital has caused that organizations are relied greatly on the knowledge and

skills of their employees in order to generate income and growth and, also, improvement of the efficiency and productivity (Wistphln, 1999).

The structural capital consists of all non – human reservoirs of the knowledge in organization which includes the data base, organizational charts, executive instructions, processes, strategies, executive plans and whatever whose value for the organization is higher than the corporal values (Rooset, 1997). Edvinsson and Malone define the structural capital as the hard ware and soft ware of the data base, structural structure, right of registering the inventions, trademarks and each sort of another organizational capability which supports the productivity of the employees (Edvinsson and Malone, 1997).

Roos et al. (1997) describe the structural capital what remains in the organization after that the employees go to their homes. Bontis also introduces the structural capital as instructions, strategies, policies and whatever makes the value of the organization more than its physical value. According to the findings of Bontis, the intellectual capital does not reach all its own potential in an organization with the weak procedures and methods (Bontis, 1999). Customer capitals embrace both the current value of the organization's relationships with customers and the future potential value of these relationships. For this reason, customer capital places in the hidden knowledge at the marketing channels and customer's relationships therefore, includes the cases such as trade mark, market share, customer information, relationships with customers, points of gaining access to customers and trading contracts (Bontis, 2000). In the section of the market assets, Brooking refers to customers, their loyalty and the distributing channels related to the customer capital (Brooking, 1996). Stewart asserts that ("customer capital") consists of the market data / information for the usage in the attraction and protection of the customers (Stewart, 1997). In his studies, Fornel has found that customer satisfaction can keep the business relationship, reduce the flexibility of the product's price and increase creditability of a company (Fornel, 1992). Chen et al. (2004) believe that customer capital acts as a bridge and intermediate or in the process of the intellectual capital.

The customer capital is the main determinant factor in the converting of the intellectual capital into marketing share and thus in the business operation of the organization. Without the customer capital the marketing value or business operation cannot be achieved. Therefore, the growth of the customer capital depends on the support from the human capital depends on the support from the human capital and structural capital.

Conclusion

Considering that the results of the performed researches of Bontis and Serinko in 2004 based on the relationship of the intellectual capital and productivity conform with

the results of the current research and, also, most researchers in the Iran tried to study a major section of the researchers under the subject of the effect of the intellectual capital on the operation of companies and organizations, so the distinction aspect of the current research is that the effect of the intellectual capital on the productivity of the organization has been researched for the first time in Iran.

As a result, it can be concluded generally that the human knowledge and intellectual capital are the most valuable factors of the development in addition to the other traditional resources (work, land, capital) which can be planned and studied. The knowledge – based economy is an economy which is directly on the basis of the production, distribution, knowledge consumption and the learned data, and the success of the organization in this economy is put in pawn of the application and correct management of the elements and knowledge of the intellectual capital as invisible and intangible assets in addition to other visible, tangible and physical assets. Also, the results obtained in this research suggest that there exists a positive and significant relationship between the dimensions of the intellectual capital and the productivity of the organization which is to be increased by the correct management of the intellectual capital in productivity of organization especially, its advantage which, in a knowledge based economy, the intellectual capital is identified as the most important competitive advantage of the organizations.

In this economy, variables such as income, profitability and asset reflect only a small part of the success of an organization exploitation from the specialist and superior human resources, knowledge and skill of the individual, organizational culture, reputation among the customers and also in a word, organizational intellectual capital. With regard to this point that the organizational invisible capitals of this sort are not reflected in the balance sheet, yet they have a remarkable effect on the productivity of the organization and must require the attention, the allocation of the resources and daily increasing emphasis of the excellent management of organizations must be taken into consideration.

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