The Relationship between Intellectual Capital and Organizational Innovation among Faculty Members of International University of Yazd, Iran 2015-2016

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Abstract
Organizational innovation is one of the most expected targets for managers which can be affected by the intellectual capital of the staff. The present study aimed to investigate the relationship between intellectual capital and organizational innovation among faculty members of International University of Qeshm, Iran 2015-2016. For this purpose, all the faculty members of Islamic Azad University of Yazd have been intended from among whom 170 participants were selected based on Morgan table. The research instrument included Bontis' intellectual capital questionnaire and organizational innovation questionnaire created by Randsip. Reliability coefficients of the Bontis questionnaire and Randsip's organizational innovation questionnaire were 0.87 and 0.81, respectively. The questionnaires were distributed among the faculty members. The results showed that there was a positive relationship between intellectual capital and components of human capital, structural capital and customer with organizational innovation.

Further, the results showed that intellectual capital is one of the factors affecting the ratio of organizational innovation among the members of an organization.

Keywords: intellectual capital, organizational innovation, faculty members.
1. Introduction
In today's world, fierce scientific, technological, economic and social competition has been emerged and a detailed look makes the role of universities to succeed in many fields undeniable. Universities are the context for scientific and technology production and are the scientific support of economic, political and social societies. Awareness of these cases, according to the university, their vision and mission, scoping styles and implementation of these goals, planning and organizational management, makes the optimal use of human resources and organizational knowledge necessary. What is essential for the development of modern universities includes the serious need for innovation and innovation in human resources and organizational knowledge with the aim of building capacity to meet the challenges of globalization.

Today, in the more advanced universities in the world debates on the future-oriented strategy of the organization, production and sales of knowledge, intellectual capital and promotion of innovation and innovation are of extreme importance. This phenomenon is true in general and at universities in particular. With a futuristic look in higher education of the countries we find the transition from quantity-oriented to quality-oriented education today and the educational system clients are seeking skills and more value-added training and education systems are also looking for enjoying the strongest human capital in order to achieve the goals of the education system. In this competitive world, resorting to physical and financial assets is no longer held accountable but with a broad and deep perspectives and using intellectual property management, one can achieve academic missions (Yar Mohammad Zadeh, 2010).

One of the critical requirements and strategic management at leading organizations is to have access to knowledge and up dated information of the organization comprehensively to realize the main tasks of management and strategic decisions. Davenport and Proskak (1998) argue that knowledge conversion process requires an organization that the shape and structure is designed so that the field of sharing intellectual property between members of the organizational common language for the promotion and significant transfer of knowledge is provided. That is because one of the most important tasks of intellectual capital management is to shape the processes of knowledge creation and value education. In fact, the issue related human resources and intellectual property and intellectual capital.

The main route through knowledge management and intellectual capital is departure from human resources toward the intellectual property and then convert it to a form of intellectual property which is more specialized and more recognizable (Khavandkar et al., 2009). Today, the organization does not include the labor, manpower and human resources, rather, it is considered as intellectual capital, the idea which is of an increasing their value in today's organizations. The present requirement of the universities today is to adopt some measures so as to be able to use these funds in the best way and for the future planning and management of the organizations. So in this case it is necessary to pay more attention to the intellectual capital as a key element of the organization instead of considering the organizational capital.
Stewart (2001) considered intellectual capital as a package of useful and practical knowledge and regarded knowledge assets including talent, skill, why's, how's, and relationships which can be converted into value. Edvinnson and Sullivan (1998) defined intellectual capital as the knowledge which can be converted into the worth. Gatrie et al (2003) reported that intellectual capital includes a set of financial audit function, reporting and financial reporting on performance, accounting and control management, defining and categorizing the knowledge objectives. Bontis (2000) regarded intellectual capital as trying to make effective use of knowledge (the final product) versus (raw material). Strassmann defined intellectual capital as including the net difference between the market value and tangible assets (Joshi, 2009). Shahabet et al (2008) considered intellectual capital as the "economic value of intangible assets distributed and interconnected computer networks and human capital, human resources and institutional clients within the organization.

According to Edvinnson and Mulone (1997), intellectual capital means having a different look to the values of human capital and structural organization that can both be there for them. Stewart (2001) defines the intellectual capital in terms of resources related to the creation of wealth through investment in knowledge, information, intellectual property and the experience. This concept encompasses three major non-financial components as the following: human capital: human resources elements including attitudes, competencies, experience and skills, innovativeness and talent explicit knowledge is implicit in the minds of the people. Human capital is an important source of innovation and strategic reconstruction for organizations. Human capital which is at a higher level is often associated with more efficiency and higher income or salary and benefits. So, it is for the benefit of human resource managers to attract and develop the best and most effective employees as a means to achieve competitive advantage.

Structural capital: it refers to the learning and knowledge called for in everyday activities. The body of knowledge in an organization which remains at the end of the day and after people leave the organization, is the core of the structural capital. Structural capital is the support structure of human capital and includes all non-human reservoirs of knowledge in organizations such as databases, manual processes, strategies, procedures, organizational culture, and publishing and copyright which create value for the organizations and therefore contribute to the material values of organizations.

Relational capital: it specifies the formal and informal relations with stakeholders outside the organization and their perceptions about the organization and exchange of information between organizations. Relational capital for an organization's human capital and structural capital is important because by it operates connecting with other external stakeholders, such as an enhancing element to create value for the organization. Students, parents, staff, community, government, institutional, cultural, economy are considered as the university clients. The three components of intellectual capital are interdependent. The intellectual capital provide the best possible value for organizations through the composition, deployment, engagement, integration and interoperability between its three components manage the flow of knowledge between them.
(Bontis 2000, Picke et al., 2002). The three components of intellectual capital are interdependent. The intellectual capital provide the best possible value for organizations through the composition, deployment, engagement, integration and interoperability between its three components manage the flow of knowledge between them (Kong, 2007).

In fact, intellectual capital is an organizational resource that is part of the organization's explicit and tacit knowledge (Umemto, 2002). Obviously, changing the direction of movement of traditional assets towards new assets such as intellectual capital requires innovation and innovation. Today, innovation is the only way to survival of organizations that in this turbulent and variable environment are synchronized with the environmental changes. Today this process is necessary to adapt to change and modify the new instrumental change (ZohraDeheshti et al., 2010).

In fact, in today's political, economic and social world, the pace of change is unthinkable and only the organizations can hope to survive in the competition that have the leading intellectual capital and human resources, knowledge workers, innovative and innovative as the most important intangible assets (Aghaiee and ZarandKhalidi, 2011)

Thus innovation and innovation are the foundation stone and opening the way to productivity, development and growth and flourishing of the organizations and organizations that are considered innovative and innovative focus their attention towards their intellectual capital and use the trained, innovative and flexible human capital to enhance the value of their organizational structure.

Innovation is an attempt to make a change in the social or economic potential of the organization; innovation is employing the thinking or mental abilities to create a new concept (Babaei Arbu Sara et al., 2011). Several studies have demonstrated the role of intellectual capital on organizational innovation. Siadat et al., (2007) in the study entitled as "The relationship between the nature of jobs and innovation of the employees according to the supervisors at Esfahan Steel Co. (ESCO)" found that there was a statistically significant relationship between the components of the nature of the occupation and innovation of the employees. Subramanian and Youndt (2001, cited byAndriessen, 2004) in a study entitled as "the impact of intellectual capital on a variety of innovative features on 93 organizations" found that human, organizational and social capital as well as the interrelationship between these three dimensions affect the innovative capabilities. The findings also indicated that organizational capital has a greater impact on innovation capability development. However, the relationship between human and social capital on innovative strategies are more fundamental.

Assi Ahmed (2007, cited by Chong, 2008) examined the effect of intellectual capital (human, structural, and relational capital) on organizational innovation among sixty companies in a study entitled as the "impact of intellectual capital on organizational innovation".

The population of this research included the managers of the research and development and quality control departments of these organizations. The results showed that from among the dimensions of intellectual capital, two dimensions of structural capital and relational capital had
an impact on organizational innovation. According to what was said, it can be concluded that considering today's intellectual capital and innovative strategies has become increasingly important and this issue has found a special place in higher education as the most important development axis. The outlook of Iran 1404 suggests that thinking and background the academies to propel the strategic management of intellectual capital are available because based on one of the provisions of the twenty-year vision Iran is a developed country ranking first scientific Economic technology in the region. And it is clear that this perspective makes it ever more necessary for the universities to be strategic. Attaining a 20-year perspective of the country, especially in some universities require skilled manpower and knowledge, organizational structures tailored to application requirements and flexible according to the needs of customers and stakeholders in these dimensions is in the form of intellectual capital. According to this perspective and in line with the needs of the academic community, what needs to be examined about the universities are: first, faculty members of the universities who are the main elements for managerial, executive and training in universities are familiar with intellectual capital management process and if the knowledge, information, structures, and the required instruments are provided to run and finally that to what extent the strategy–based universities can strengthen the intellectual capital of the university. In addition, today's world is the world of competition. In the present arena, the communities will be successful and leading which could make the most use of its resources that is the invested human resources and thus ensure their sustainability, survival and dynamics (Hashemi and A., 2005). This task can be available through organizations such as higher education by its target and mission. However, due to issues such as globalization, the collapse of borders, growing competition and other factors, universities are strongly faced with issues such as inefficiency of human resources, lack of using all the resources and potential, everydayness, and brain drain.

While human resources in the country in various sectors including higher education had the required potential and are able to realize all-round development by effective and efficient management. The present study aimed to investigate the relationship between intellectual capital and organizational innovation among faculty members of International University of Qeshm, Iran 2015-2016 and provide solutions in this area.

2. Research Hypotheses

1. There is a relationship between the intellectual capital and its components with organizational innovations among the faculty members of International University of Yazd, Iran.

2. Intellectual capital and its components have the capability to predict the organizational innovation among the faculty members of International University of Yazd, Iran.
3. Research Method

The present study is descriptive correlational study and applied in terms of purpose. Population of the study included all the faculty members of Islamic Azad University of Yazd during 2015-2016 who were a total of 300 members from among whom 170 participants were selected based on Morgan table. In the present study because the study population was composed of university staff, the stratified random sampling method is used to determine the population size. Since the University is made up of several colleges, the list of faculty within the university faculty were taken for each faculty staffing and in proportion to the population size of each faculty a sufficient number of questionnaires were randomly distributed between them. Furthermore, for data analysis the descriptive statistics including the mean, standard deviation, charts and tables and at the referential level, Pearson correlation coefficient and multivariate regression were used to test the research hypotheses.

3.1. Research Instrument

The questionnaire of intellectual capital: This questionnaire was developed and designed based on Bontis's questionnaire in 2010. The main questionnaire included 90 questions and was based on the Likert scale designed for industrial organizations and had the components such as competency, profit growth, market values and others. After the translation is complete, and with the help of the teachers, advisors and experts at the preparation phase and determining the validity and standardization, a number of questions were eliminated, and by the localization of some components, a questionnaire containing 30 questions based on Likert scale was set as follows. Components: a) human capital (competence, ability, relevance and value of employees) B) structural capital (knowledge and information databases store) C) relational capital (customer base, customer relationship and customer potential).

The questionnaire of Organizational Innovation: this questionnaire was developed by Randsip which included 50 questions and based on a five-point Likert scale. The questionnaire is scored as completely agree -2 to completely disagree +2. Furthermore, a part of the questionnaire was also set to determine the demographic features of the statistical sample (type of faulty, age group, scientific rank and educational degree) by the present researcher. In the present study the reliability coefficients of the Bontis questionnaire and Randsip's organizational innovation questionnaire were 0.87 and 0.81, respectively which indicated high precision of these instruments.

4. Findings

In order to provide a general description of the characteristics of the sample in the variable dimensions of organizational innovation and intellectual capital, the descriptive information such
as mean, standard deviation, maximum and minimum scores as well as the number of participants will be presented in table below.

Table 1: the descriptive statistics of organizational innovation and intellectual capital in the sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>min</th>
<th>max</th>
<th>mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>organizational innovation</td>
<td>170</td>
<td>-21</td>
<td>10</td>
<td>-9/18</td>
<td>8/39</td>
</tr>
<tr>
<td>human capital</td>
<td>170</td>
<td>26</td>
<td>36</td>
<td>30/25</td>
<td>3/29</td>
</tr>
<tr>
<td>structural capital</td>
<td>170</td>
<td>24</td>
<td>38</td>
<td>30/94</td>
<td>3/24</td>
</tr>
<tr>
<td>relational capital</td>
<td>170</td>
<td>20</td>
<td>37</td>
<td>31/78</td>
<td>4/02</td>
</tr>
<tr>
<td>intellectual capital</td>
<td>170</td>
<td>75</td>
<td>101</td>
<td>92/68</td>
<td>5/71</td>
</tr>
</tbody>
</table>

1. There is a relationship between the intellectual capital and its components with organizational innovations among the faculty members of International University of yazd, Iran

Table 2: Correlation values and coefficient of determination for intellectual capital variables and its components with organizational innovation

<table>
<thead>
<tr>
<th>variable</th>
<th>correlation</th>
<th>Sig.</th>
<th>Determination coefficient</th>
<th>Modified determination coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>intellectual capital</td>
<td>0/214</td>
<td>0/005</td>
<td>0/046</td>
<td>0/04</td>
</tr>
<tr>
<td>human capital</td>
<td>0/222</td>
<td>0/004</td>
<td>0/049</td>
<td>0/043</td>
</tr>
<tr>
<td>structural capital</td>
<td>0/15</td>
<td>0/04</td>
<td>0/025</td>
<td>0/019</td>
</tr>
<tr>
<td>relational capital</td>
<td>0/186</td>
<td>0/015</td>
<td>0/034</td>
<td>0/029</td>
</tr>
</tbody>
</table>

Pearson correlation coefficient was used in order to investigate the relationship between organizational innovation and intellectual capital and its components. Based on the table above, there was a high correlation between organizational innovation with variable of intellectual capital, human, structural and relational capital with coefficients of 0.22, 0.214, 0.15 and 0.18, respectively, all of which were significant. Therefore, intellectual capital and its components also increased organizational innovation.
2. Intellectual capital and its components have the capability to predict the organizational innovation among the faculty members of International University of Yazd, Iran.

Table 3: prediction of organizational innovation based on intellectual capital and its components

<table>
<thead>
<tr>
<th>Predicting variables</th>
<th>B</th>
<th>SD</th>
<th>Beta coefficient</th>
<th>statistics</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>intellectual capital</td>
<td>0/31</td>
<td>0/11</td>
<td>0/21</td>
<td>2/83</td>
<td>0/005</td>
</tr>
<tr>
<td>human capital</td>
<td>0/56</td>
<td>0/19</td>
<td>0/22</td>
<td>2/94</td>
<td>0/004</td>
</tr>
<tr>
<td>structural capital</td>
<td>0/4</td>
<td>0/19</td>
<td>0/15</td>
<td>2/06</td>
<td>0/04</td>
</tr>
<tr>
<td>relational capital</td>
<td>0/380</td>
<td>0/15</td>
<td>0/18</td>
<td>2/44</td>
<td>0/015</td>
</tr>
</tbody>
</table>

Based on the high correlation between organizational innovation with variable of intellectual capital, human, structural and relational capital, it can be stated that all the variables could positively predict the organizational innovation. Thus by increasing one standard deviation in each variables of intellectual capital, human, structural and relational capital, they would increase with coefficients of 0.21, 0.22, 0.15 and 0.18, respectively.

5. Results and Conclusion

In conclusion on the findings of the statistical analysis, for the reasons of brevity and as the correlation coefficient is the basis of regression analysis and on the other hand, due to the inlining and Skewness of the results of the correlation and regression analysis, the results of the first and second hypothesis are explained in the same direction. The results indicate that as the intellectual capital is better, the organizational innovation will be more. In explanation it can be said that according to theoretical background in the second quarter, intellectual capital is known as the skill so that the employees have introduced intellectual capital as the knowledge to understand the organization's intangible assets in which case the capital includes the resources such as employees, customers, information technology, administrative tasks and knowledge. In this case, intellectual capital refers to the knowledge and abilities of all the employees which led to the creation of wealth for the organization. Also it refers to the set of knowledge-based assets that are specific to an organization and are considered among its features and lead to significant improvement of the competitive situation by adding value to key stakeholders of the organization. In other words, group intellectual capital is a set of knowledge assets which are affiliated to an organization and with the addition of the organization by identifying key stakeholders dramatically improve the competitive position of participating organizations and is obtained through human capital, structural capital / corporate and investor / client relations. In today's world of technology, innovation and innovation and aggressive competition, if the organizations cannot keep pace with the amazing process of changes and have no knowledge, new products or services for the arena, they will get out of the competition and
will certainly fail. Today's organizations in this highly competitive environment should create and encourage innovation and innovation among their employees to address the problems caused by this change and improve growth and development and accomplishing this requires attention to all three dimensions of intellectual capital.

Universities are the best place for innovation in a developed society. As long as the organizations have innovative human resources, innovative space and cooperative communication system, there would be no possibility of organizational innovation. Then the relational dimension of intellectual capital and organizational innovation will be explained. The results of the present study were in line with the results of the studies by Siadat et al., (2007), Subramanian and Youndt (2001, cited by Andriessen, 2004) in some dimensions. Also on the positive relationship between human capital and organizational innovation, it can be said that the human capital represents an organization's knowledge. Human capital is the most important asset of an organization and source of innovation and innovation. Assets of tacit knowledge of employees in an organization, one of the most vital components that have a significant impact on organizational performance, human capital is the sum of employees' professional knowledge, leadership abilities, risk-taking and problem-solving skills, professional knowledge in the form of professional capital of the staff, leadership abilities, the risk of irreversible and problem-solving abilities. The existence of human capital indicates the organization knowledge that lies in human existence. Further, the combination of knowledge, skills, power of innovation and the ability of individuals and organizations to perform their duties, and it includes values, culture and philosophy of the organization (Advinnson and Mulone, 1997). Paying attention to the human capital is associated with increasing the employee commitment and loyalty and the consequent organizational innovation. That this dimension is evident in this study and the results of this research are in line with the study of Assi Ahmad (2007, cited by Chung, 2008). Furthermore, the positive relationship between structural capital and organizational innovation was approved. In explanation, it should be stated that the structural capital include organizational capitals such as intellectual property, innovation, processes and cultural assets as well as modernization and development capitals such as patent products and the efforts of education. The structural capital also includes asset infrastructure, including technology, processes and procedures as well as intellectual property, including know-how, trademarks and patent products.

In general it can be said that structural capital refers to anything that exists in the organization and support the staff (human resources). Further, the organization with strong structural capital has a supportive culture which allows people to carry out their new tasks, fail and learn. Structural capital is a function of human capital because human capital is a determinant of organizational form. On the other hand, structural capital soon be under the influence of human capital and is clearly affected independent of human capital. Thus, structural capital and human capital interact with each other to help organizations to shape and develop a coordinated capital to operate (Chen and Huang, 2007). With respect to the components of the capital structure, organizational development, research and development centers being equipped with advanced
techniques, adequate funding for research on the one hand and organizational innovation as information agent and the ability of the other hand, explained the relationship between these two related variables. Results of the study were in line with the results of the study by Assi Ahmad (2007, cited by Chung) and Subramanian and Youndt (2001, cited by Andriessen, 2004). The results showed that as the organizational innovation is better relational capital will be more. In explanation it can be said that relational capital includes relationships with stakeholders inside and outside the organization. A sign of relational capital is related to customers. Relational capital include indices, such as the existence of overall customer satisfaction of the company, reducing the time to resolve customer issues to a large extent, the highest market share in the industry, access to customers and loyal in comparison with competing companies, customers attraction to a new business plan in the industry, publishing customer feedback across the enterprise, acclaming long-term relationships with customers by others, paying attention to the demands and customer approach, investing in customer demands, ensuring continuity of the relationship with the customer, staff knowledge of target markets and customers, chronic exposure to an awareness of their needs, providing the best valuable services to customers in the industry, regulations and bilateral fair with suppliers, timely fulfillment of obligations towards suppliers, investors easy access to required financial information. Since the retention of existing organization is dependent on the customers, therefore, the organizations are more competitive which could provide more innovative and creative services. At the academic structure due to increased competition between universities in order to attract maximum customers (students), identifying human resource needs, both formal and informal including students, faculty and staff and understanding the expectations and attitudes to achieve desired results has made innovation as a fundamental requirement in universities of the present time. The limitations of the study included lack of cooperation by the university authorities to provide information on teachers, difficult access to university professors in various disciplines and cultural difference in the research environment. Thus, since the study was conducted in Islamic Azad University of Yazd, the results of the study cannot be generalized to other universities.
References


