The relationship between intellectual capital management and organizational culture at Islamic Azad University

Taghipoorzahir Ali, PhD and Elham Kaviani

1Faculty Member at Science and Research Branch, Islamic Azad University, Tehran, Iran
2PhD student, Department of Educational Administration, Science and Research Branch, Islamic Azad University, Tehran, Iran

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ABSTRACT

The present study examined the relationship between intellectual capital management and culture at Islamic Azad University in Kermanshah. This research is descriptive-correlation study. The research population included administrators (university presidents, vice presidents, and managers, etc.) of Islamic Azad University in Kermanshah in 2012. There were 206 people of whom a sample of 126 were selected as the study sample through Stratified random sampling method. The data were collected from intellectual capital management and organizational culture questionnaires. Their validity was calculated through formal, content and structural validity. Their reliability, also, was calculated by Cronbach's alpha. The coefficient for intellectual capital management and organizational culture questionnaires were reported 0.925 and 0.922, respectively. In this study, descriptive statistics and inferential statistics were used to meet the assumptions of statistical methods in the study. Descriptive statistics included the median, mean, standard deviation, and standard deviation error. Inferential statistics included Pearson correlation coefficient and t-test. The results showed a significant positive correlation between intellectual capital management and organizational culture as well as the main component of the intellectual capital management- human capital management, structural capital management, customer capital management- and organizational culture.

Key words: intellectual capital management, human capital management, structure capital management, customer capital management, organizational culture.

Introduction

In recent years, great advances have been made in technology and knowledge. Intellectual capital is a result of these developments [8] and is considered as an invaluable asset [25]. Now, intellectual capital is deemed important in public institutions such as universities and public research centers. A decade ago, intellectual capital or knowledge management were applied for specific cases, but they are now applied generally to almost all entities [16]. The importance of intellectual capital in higher education institutions have been investigated by some researchers as kronin & davenport, Hargryis, Kelly, Vastine to whom Intellectual capital was the most important of the academic capitals [24]. In fact, universities and research centers are generating knowledge and basically investigating in research, innovation and human resources. Therefore their valuable assets naturally yield intangible outcomes. Unfortunately, there is a lack of knowledge management program allocated for recognition, measurement and valuation of intangible assets. Of course, the trend is changing being influenced with the role of private universities and research centers and competent leadership enjoying knowledge and insight in identifying value-added benefit in their organizations [3]. New patterns of intellectual capital have been developed in recent years giving importance to factors such as organizational culture. Organizational culture indeed enjoys a special place in the new models of intellectual capital. So, considering the value of intellectual capital and organizational culture in educational organizations, the present study seeks to determine the relationship between intellectual capital management and organizational culture. Hence, concepts of intellectual capital management, its origin, concepts of organizational culture and the relationship between intellectual capital and the organizational culture are considered based on the findings of the relationship between intellectual capital and organizational culture.

Intellectual Capital Management and its Origin:
The history of management thought dates back to the early 1980s in which administrators and faculty advisors around the world noticed intangible assets affecting the profitability of the the company. Hiroyuki began intellectual capital movement in Japan. He studied the impact of intangible assets on the management of Japanese companies. Carl Eric, Swedish director of a small publishing company, showed how to manage intangible assets in a book published in 1986. He gave importance to both human capital and human intellectual capital and thereby expressed his views about the merit and value of knowledge workers in organizations. In general, there are two different economically and socially approaches to the management of a firm's intellectual capital in knowledge-based entities. First approach stresses upon knowledge accumulation in order to develop the capacity for long-term profitability of the firm. It emphasizes on the importance of human capital approach, especially the staff, in order to improve learning, cultural development, enhance functionality, improve communication and develop the knowledge. Therefore, the approach is formed on a series of studies in the field of education, philosophy, religion, science and society. The second approach to the management of intellectual capital emerged from economic theories in which the intellectual capital measured and managed as financial and economic procedures. According to the theoretical framework, the system approaches intellectual capital as economic and financial value [9].

Managing Intellectual Capital:

The intellectual capital management is an area for creative, intelligent people, new management techniques, new information technologies and new ways to improve post-modern industrial economy [26].

Ding & Li [7] argues capital intellectual management should have three layers as following:

1. The core layer. On this layer, the knowledge management could provide the knowledge platform for the expansion of Intellectual Capital by assimilating exterior knowledge, integrating interior knowledge and creating new knowledge.
2. The expansion layer. On this layer, the enterprise Intellectual Capital could realize the value enhancement by the expansion, and accordingly drive the value enhancement of the whole enterprise.
3. The strategy layer. As a subsystem of the enterprise management, the management of enterprise Intellectual Capital must accord with the development strategy of the enterprise and make proper adjustment according to the strategy of the enterprise. As viewed from the content of Intellectual Capital management, it is different with other traditional managements.

The main components of Intellectual Capital Management:

Management of intellectual capital is composed of three components as follows:

Human Capital Management:

Human capital is one of the main categories of intellectual capital. Ross et al describes it as soul of an organization or institution [10]. Human capital is the competence and ability of employees [5]. Human capital management recruits, analyzes and reports data specific to the management of human resources [1]. A comprehensive Human Capital Management (HCM) strategy addresses the organization’s need to measure accurately measure and improve Human Productivity at the macro level and at the micro level [11].

Customer capital management:

Customers are main intellectual capital resource. Therefore customer relationship management (CRM) should be dealt through the use of projects and programs to attract investment and intellectual capital for quality products and services and to better meet the needs and preferences of the customers [22]. Bontis [2] believes that the nature of the customer capital is entangled with the knowledge of external environment like existing marketing channels as well as its relations with foreign investors such as suppliers, customers, partners, local

The Concept of Intellectual Capital Management:

Different definitions have been made about intellectual capital management in economics, but most people consider intellectual property management and intellectual property management as synonymous.

Intellectual Asset Management:

Intellectual Assets are the codified (documented) knowledge of companies and organizations. Some refer to Intellectual Assets as the “Structural Capital” of companies. Intellectual Asset Management (IAM) broadly refers to the “Value Extraction” process of ICM practice. The Scottish Intellectual Assets Centre describes IAM as “the process of both capturing and managing knowledge, and fully exploiting it for commercial gain” [12].

Intellectual property management:

Intellectual property management concern the activities, decision processes, work processes, and data-bases used for commercializing individual patented technologies or innovations [19].
communities, industry associations and others. Although first proposed by Hubert Saynt, customer capital is believed to be associated with the concept of relational capital encompassing the knowledge of all relationships with customers, competitors, suppliers, trade associations or government [2]. Additionally, Ross et al state that the relational capital includes relationships with stakeholders inside and outside the organization [20]. The concept of customer management is defined as the general design to manage customer assets which is different for different groups of customers [13].

**Structural capital management:**

This type of capital is dubbed as "an organization’s exclusive knowledge". Structural capital encompasses three basic types of enterprise, innovation and process capitals. Structural capital management includes all existing computer systems, supply and demand channels as well as organizational philosophy and culture. Innovation capital management: includes the ability to create new products and services that represent value to customers and primarily includes patents and brands trade. Process capital management: Although less important than innovation capital management, process capital management drives a given organization towards long-term sustainable and effective competition. Plus, business processes and practices unique to a project management of a firm is not easily imitated by competitors leading to lasting benefits and long term. However, identification, compilation and analysis of capital management is a very difficult process [21].

**Organizational culture concept:**

Organizational culture is the behavior, identity and values framework of a specific firm [4]. Organizational culture is mandatory for successful knowledge management. Culture represent beliefs, value, norms and social customs affecting individual behavior and deeds in the organization [23]. Holtz defines culture as "organizational development background and a successful company’s strategic requirement. He states that Kapland’s definition implies a key step toward intellectual capital development [15]. In fact, organizational culture is one of the important components of intellectual capital [18]. Culture has a significant impact on intellectual capital and linking its various components in the organization [9].

Culture and human capital: The relationship between culture and human capital seems undeniable. This is a two-way relationship, because both are trying to reinforce the characters of another. Culture being influenced by the values, norms and beliefs is at the heart of the organization; while human capital should be maintained in a high level with a culture that organizational processes provide [16]. Culture and structural capital: Technology, tools, and organizing are the important elements in strengthening the knowledge management in structural capital. Before an organization wants to use technology to achieve success in knowledge management, it should accurately identify the cultural issues. Studies were carried out in this regard to express the fact that one of the main problems in the area of knowledge management technologies is a lack of cultural stereotypes for promoting knowledge sharing. For maximizing the benefits of knowledge management, organizations must be able to organize culture. This organizing appears in factors as follows: willingness to work together, sharing information, working closely with others, innovation, staff support, etc. Some research have been done on managing intellectual capital and the impact of culture on this type of management as following:

- Kok [10] in a study titled "Intellectual Capital Management as part of knowledge management initiatives in higher education institutions' examined the knowledge management at the knowledge-based economy. In his research, intellectual capital management and three components of human capital, structural capital, and customer capital were examined and some models were provided for intellectual capital management and intellectual assets management and measurement methods of them.
- Sanchez et al [16] in a study titled "The intellectual capital and organizational culture: A new model" presented a model to determine the relationship between the concepts of organizational culture and intellectual capital. Then, they presented a model for measuring intellectual capital. Organizational culture is at the center of this model and human capital, organizational capital, relational capital, social capital and the technology capital are at the margin. Later it became clear that cultural capital is divided into national and organizational levels.
- Nonanco et al [14] studied the impact of organizational culture on knowledge management at Honda and concluded that if organizational culture was not changed, new knowledge would not created.
- Roshanfekr [15] in his study investigated the relationship between organizational culture and intellectual capital. This model introduced culture as a necessary component of intellectual capital. This study proposed a new model for evaluation of intellectual capital. This model considered culture as the core around which the investment conglomerate formed. In some organizations, the importance of intellectual capital can be seen at two levels: National culture and organizational culture. These forms are required and provide insight into the internal model. Patterns of intellectual capital lack internal logic; when they introduce intellectual capital as a body, they match the factors with the
used variables. There is a tendency to consider each of these factors or assets independently without linking them together. This paper focuses on the aforementioned internal logic and considers culture as a key factor. This work provides a new focus on the role that is played by the accumulation of intellectual capital in business.

**Materials and Methods**

This research is descriptive-correlation study. The research population included administrators (university presidents, vice presidents, and managers, etc.) of Islamic Azad University in Kermanshah in 2012. There were 206 people of whom a sample of 126 were selected as the study sample through Stratified random sampling method.

**Research Tools:**

In order to achieve the research objectives of this study, two questionnaires were used as follows:

**The first questionnaire:**

Intellectual capital management questionnaire was used for measuring intellectual capital management. This questionnaire consists of three main components of the human capital management, structural capital management, and customer capital management encompassing 52 questions. After confirmatory and exploratory factor analysis, 36 questions were determined as the main questions.

**The second questionnaire:** Carmeli’s organizational culture questionnaire (2006) was used for measuring organizational culture. This questionnaire measures five dimensions of organizational culture (job challenge, communication, innovation, trust and social cohesion) with 18 items.

Their validity was calculated through formal, content and structural validity. Their reliability was calculated with Cronbach alpha. The intellectual capital management and organizational culture questionnaires coefficients were reported 0.925 and 0.922, respectively.

**Methods of analysis:**

In this study, descriptive statistics and inferential statistics were used to meet the assumptions of statistical methods in the study. Descriptive statistics included the median, mean, standard deviation, and standard deviation error. Inferential statistics included Pearson correlation coefficient and t-test.

**Results:**

The results indicated that of the total respondents, 75.66 percent (n = 115) were male and 24.34 percent (37 people) of them were women. In terms of Academic Degree, 76.32 percent (116) were Coaches, 22.37 percent (34 cases) were Professors and 1.32 (n = 2) were Associate Professors. Descriptive data, the mean and the standard deviation of variables are given in Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Median</th>
<th>Average</th>
<th>St dev</th>
<th>St err mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital Management</td>
<td>7.500</td>
<td>7.417</td>
<td>1.192</td>
<td>0.097</td>
</tr>
<tr>
<td>Structural Capital Management</td>
<td>6.708</td>
<td>6.698</td>
<td>1.543</td>
<td>0.125</td>
</tr>
<tr>
<td>Customer Capital Management</td>
<td>7.000</td>
<td>6.662</td>
<td>1.510</td>
<td>0.122</td>
</tr>
<tr>
<td>Intellectual Capital Management</td>
<td>7.167</td>
<td>6.926</td>
<td>1.117</td>
<td>0.091</td>
</tr>
<tr>
<td>Organizational Culture</td>
<td>6.75</td>
<td>6.41</td>
<td>1.50</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Based on data reported in the table 1, the mean and standard deviation of "human capital management" are reported as 7.417 and 1.192, respectively. Similarly, the mean and standard deviation of "structural capital management" are 6.698 and 1.543, respectively. The mean and standard deviation of "Customer capital Management" are 6.662 and 1.510, respectively. In addition, the mean and standard deviation of "intellectual Capital management" are 6.926 and 1.117 respectively. Accordingly, among the reported variables, "human capital" had the highest and "customer asset" had the lowest mean.

The research questions will be addressed at the following:

**Research hypothesis test:**

The main hypothesis of the research: There is a relationship between intellectual capital management and organizational culture. Pearson correlation coefficient was used for examining the correlation between intellectual capital management and corporate culture. This relationship was confirmed in this study and the correlation is r = 0.47. Thus, as Table 2 shows, there is a positive and significant relationship between intellectual capital management and organizational culture.

T-test was used for testing the significance of the correlations between variables with degrees of freedom 2-n. The above table shows that the calculated T for intellectual capital management and corporate culture is significant at 99% confidence level. Thus it is expected that the significant variables correlation in the population to be significant at a confidence level.
The first sub-hypothesis: there is a relationship between organizational culture and human capital management. Pearson correlation coefficient was used for examining the correlation between human capital management and organizational culture. This relationship was confirmed in this study and the correlation is \( r = 0.33 \). Thus, Table 3 shows, there is a positive and significant relationship between human capital management and organizational culture.

\[ \begin{array}{|l|l|c|c|c|c|c|} \hline \text{Variable} & \text{Variable} & \text{Coefficient Correlation (r)} & \text{Coefficient Explanation (r}^2\text{)} & \text{t} & \text{Sig} & \text{Within the Source} \tabularnewline \hline \text{intellectual capital management} & \text{Organizational Culture} & 0.47 & 0.22 & 6.53 & 0.000 & 2.04 \tabularnewline \hline \end{array} \]

Table 3: The correlation between human capital management and organizational culture.

\[ \begin{array}{|l|l|c|c|c|c|c|} \hline \text{Variable} & \text{Variable} & \text{Coefficient Correlation (r)} & \text{Coefficient Explanation (r}^2\text{)} & \text{t} & \text{Sig} & \text{Within the Source} \tabularnewline \hline \text{human capital management} & \text{Organizational Culture} & 0.33 & 0.11 & 4.35 & 0.000 & 3.29 \tabularnewline \hline \end{array} \]

T-test was used for testing the significance of the correlations between variables with degrees of freedom 2-n. The table 3 shows that the calculated T for human capital management and corporate culture is significant at 99% confidence level. Thus it is expected that the significant variables correlation in the population to be significant at a confidence level.

The second sub-hypothesis: there is a relationship between organizational culture and structural capital management. Pearson correlation coefficient was used for examining the correlation between structural capital management and organizational culture. This relationship was confirmed in this study and the correlation is \( r = 0.19 \). Thus, as Table 4 shows, there is a positive and significant relationship between structural capital management and organizational culture.

\[ \begin{array}{|l|l|c|c|c|c|c|} \hline \text{Variable} & \text{Variable} & \text{Coefficient Correlation (r)} & \text{Coefficient Explanation (r}^2\text{)} & \text{t} & \text{Sig} & \text{Within the Source} \tabularnewline \hline \text{structural capital management} & \text{Organizational Culture} & 0.19 & 0.04 & 2.39 & 0.018 & 5.16 \tabularnewline \hline \end{array} \]

T-test was used for testing the significance of the correlations between variables with freedom degrees of 2-n. The table 4 shows that the calculated T for human capital management and corporate culture is significant at 99% confidence level. Thus it is expected that the significant variables correlation in the population to be significant at a confidence level.

The second sub-hypothesis: there is a relationship between organizational culture and customer capital management. Pearson correlation coefficient was used for examining the correlation between customer asset management and organizational culture. This relationship was confirmed in this study and the correlation is \( r = 0.58 \). Thus, as it can be seen in Table 5, there is a positive and significant relationship between structural capital management and organizational culture.

\[ \begin{array}{|l|l|c|c|c|c|c|} \hline \text{Variable} & \text{Variable} & \text{Coefficient Correlation (r)} & \text{Coefficient Explanation (r}^2\text{)} & \text{t} & \text{Sig} & \text{Within the Source} \tabularnewline \hline \text{customer capital management} & \text{Organizational Culture} & 0.58 & 0.34 & 8.82 & 0.000 & 2.55 \tabularnewline \hline \end{array} \]

T-test was used for testing the significance of the correlations between variables with freedom degrees of 2-n. The above table shows that the calculated T for customer asset management and corporate culture is significant at 99% confidence level. Thus it is expected that the significant variables correlation in the population to be significant at a confidence level.

Conclusion:
to \( r = 0.58 \). The reported results reveal that all correlation coefficients are positive. Customer capital management and structure capital management have the highest and lowest correlation with the organizational culture, respectively. However, care should be taken because this event has occurred on the selected samples and other samples may have high or low correlation. T-test with degrees of freedom \( 2-n \) was used for testing the significance of correlation between any of the test variables. The results show that the calculated \( t \) for correlation of all variables is significant at the 99% confidence level. Thus, we can expect a significant correlation between the variables in the population.

Thus, the organizational culture as the main foundation of organization has an important role in establishing intellectual capital management, thus educational organizations and universities should pay attention to corporate culture to effectively lead and manage their intellectual property and assets. In order to more effectively use intellectual capital management programs and successfully implement management of intellectual capital, organizations should primarily identify their organizational culture and implement intellectual capital management programs in accordance with the organizational culture.

References