Intellectual Capital and organizational learning capability

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Abstract

In knowledge-based economy, intellectual capital is used in order to create and increase enterprise value and the success of an organization depends on its ability to manage this scarce resource. In addition, one of the important features of an organization that can assist in the creation and sharing of knowledge and compared to other organizations creates them sustainable competitive advantage, is the organizational learning capability. The purpose of this paper is to examine the relationship between intellectual capital and organizational learning capability (OLC). Data were collected from Khorasan Razavi Regional Water Autoraty and the research data was collected through questionnaires. Statistical sample size is considered equal to 150, validity of questionnaires was examined by Cronbach's alpha and results are generated by structural equations model (SME) method. Results show that human capital and structural capital have a significant relationship with organizational learning capability but there is not significant relationship between relational capital with organizational learning capability. Human capital is the greatest factor among these three types of intellectual capital in governmental organization. This study also provides managerial implications and limitations to data collection.

Keywords: Intellectual capital; Organizational learning capability.

1 Introduction

Intellectual capital is becoming a crucial factor for a firm's long-term profit and performance in the knowledge-based economy as more and more firms identify their core competence as invisible assets rather than visible assets [2]. Intellectual capital is the ability to utilize knowledge, industry knowledge, organizational structures and flows, customer relationships and special techniques [13]. Nonaka and Takeuchi pointed out the future society is a knowledge-based society in which knowledge storage and application are the basis of economic growth and accumulated capital [12]. Intellectual capital is a heart of organizational capabilities [11].
The importance of intellectual capital is highly recognized as a successful factor not only in knowledge-intensive organizations but also for most other types of organizations. Intellectual capital is used to create and enhance the organizational value and performance [10]. Organizations have found that the sustainable competitive advantage is based on intellectual asset management. Increasing organizational learning provide an appropriate competitive position as a strategic orientation for the survival and competitive advantage [2].

Due to the increasing complexity and speed of environmental changes and lack of the need to ensure the environment was felt that examines the relationship between intellectual capital – including human capital, structural capital, and relational capital – and organizational learning capability. Hopefully, these research results can help managers and contribute to relevant studies and future research.

2 Literature review

Here, a brief review of intellectual capital, and organizational learning capability is presented.

2.1 Intellectual Capital

Intellectual capital (IC) is a term now in common usage across different fields of academic and managerial activity [15]. Intellectual capital is a term that a first time introduced by economist John Kenneth Galbraith in 1969 and it refers to the difference between an organization's market value and book value. Intellectual capital prepares a new tool to perceive the hidden values of an organization [1]. Many researchers have come to regard intellectual capital as a firm's primary means of creating competitive advantage. Some researchers also contend that accumulating intellectual capital is beneficial to creating competitive advantage or business values. Following the above-mention literature, this study thus defines intellectual capital as the total capabilities, knowledge, culture, strategy, process, intellectual property, and relational networks of a company that create value or competitive advantages and help a company achieve its goals [9].

Bontis et al. [5] have adopted human capital, structural capital, and relational capital as the three basic dimensions of intellectual capital, also we adopted them in this study. In particular, intellectual capital is described, in one of its numerous and most famous definitions, as economic value of the combination of three categories of intangible assets:

- “Human capital” refers to the abilities, competences, and know-how of human resources;
- “Structural capital” defines the organizational knowledge, mainly contained in business processes, procedures, and systems;
- “Relational capital” takes account of the knowledge embedded in business networks, which includes connections outside the organization such as customer loyalty, goodwill, and supplier relations. These three categories are strongly complementary.

2.2 Organizational learning capability

OLC is defined as the organizational and managerial characteristics or factors that facilitate the organizational learning process or allow an organization to learn [6]. Organizational learning is the success key of organizations. So, if the most successful organizations face with poor learning capabilities, they could not benefit from all their capabilities in the field of today’s various environments [3]. Chiva identified five essential facilitating factors of organizational learning: experimentation, risk taking, interaction with the external environment, dialogue and participative decision making. Experimentation can be defined as the degree to which new ideas and suggestions are attended to and dealt with sympathetically [6]. Experimentation involves trying out new ideas, being curious about how things work, or carrying out changes in work processes. Risk taking can be understood as the tolerance of ambiguity,
uncertainty and errors. Interaction with the external environment is defined as the scope of relationships with the external environment. The external environment of an organization is defined as factors that are beyond the organization’s direct control of influence. Environmental characteristics play an important role in learning. Dialogue is considered as an essential process to develop common understanding for organizations, could help individuals to understand the hidden meanings in the communications. Participative decision making refers to the level of influence employees have in the decision-making process [6]. Organizations implement participative decision making to benefit from the motivational effects of increased employee involvement, job satisfaction and organizational commitment [2].

3 Framework and Hypotheses

Analysis in this study is at the corporate level, and this research was conducted in a governmental organization. Fig.1 shows the conceptual framework, indicating three dimensions of intellectual capital affecting each other and influencing organizational learning capability. The following explains specific hypotheses concerning these relationships, together with their underlying rationale.

Fig.1: Conceptual framework

3.1 Intellectual Capital

Human capital has been known as a resource which could not be replaced by the equipment and machines of an organization [1]. Bassi noted that Intellectual capital is the valuable knowledge of an organization [4]. Wiig noted that intellectual capital comprises all assets created by intellectual activities, including knowledge acquisition, innovation, and creation [16]. Intellectual capital also affects and advances knowledge management and improves organizational learning capability [2]. The findings of Bontis et al.’s research have shown the human capital significantly affects customer capital in all industries. Human capital significantly affects structural capital in non-service industries, while customer capital affects structural capital in both service and non-service industries [5]. Employee abilities also affect a firm's process efficiency and innovation processes. Higher quality employees will be more pleasant and provide more information to customers and business partners. These employees will attract good customers and business partners as a result. In other words, human capital positively affects relational capital. A firm maintaining a good relationship with its customers and business partners enables the employee to discuss business processes or innovations with customers and business partners. In other words, relational capital positively affects structural capital [9]. Due to mentioned discussion, our study offers the following hypothesis:
Hypothesis 1. Human capital, structural capital, and relational capital reciprocally affect each other. The research findings of Bontis et al., show that human capital significantly affects customer capital in all industries [5]. Human capital significantly affects structural capital in non-service industries, while customer capital affects structural capital in both service and non-service industries. So, we offer the following sub-hypotheses:

Sub-Hypothesis 1a. Human capital positively affects structural capital.
Sub-Hypothesis 1b. Human capital positively affects relational capital.
Sub-Hypothesis 1c. Relational capital positively affects structural capital.

3.2 Intellectual Capital and Organizational Learning Capability

Intellectual capital is the valuable knowledge of an organization. Intellectual capital also affects and advances knowledge management and improves organizational learning capability [8]. So, we offer the following hypothesis:

Hypothesis 2. Intellectual capital positively affects organizational learning capability. Knowledge innovation is a key element in creation of product value and economic growth in a knowledge-based economy. Knowledge innovation depends on organizational learning capability improvement. High-quality employees are the most important factor for a firm in this economy. Managers train their employees to be knowledgeable workers, improve their overall quality, and increase organizational learning capability [2]. Pfeffer notes that the manner in which a firm retains and trains its best human resources is the most important competitive strategy within the knowledge economy context [14]. The better employee quality, the more knowledge generated to improve organizational learning capability [2]. So, we offer the following sub-hypotheses:

Sub-Hypothesis 2a. Human capital positively affects organizational learning capability.

This study proposes that the system and process of resolving problems and creating value in a firm belongs to the organization's structural capital. These systems and processes include a firm's overall process, organizational structure design, and the capacity to utilize information technology, intellectual assets management, and information system structures. Corporate culture is the element of structural capital, which may be helpful in developing an organization's learning capability. Employees may be more willing to share knowledge with others in such a culture as a result [9]. A firm's efforts to establish an intellectual assets management system will also help it better utilize patents and intellectual property rights, pursuing value maximization and improving organizational learning capability. Focusing structural capital on establishing a databank will improve a firm's organizational learning capability and reduce the costs of decision making and misjudgment due to insufficient information [2].

Sub-Hypothesis 2b. Structural capital positively affects organizational learning capability.

Relational capital arises from relationships processes that a firm maintains with external agents [7]. Persons with more relationships and networks may exhibit better information acquisition and resource allocation. This connectedness may improve a firm's technology development capability. Maintaining and creating stable relational capital requires that a firm build up good interactive relationships with its stakeholders, customers, and suppliers. Better relationships provide greater possibilities that business partners will share their professional technology with each other. Firms gain more new knowledge from customers to improve their own organizational learning capability in the meantime [2].
Sub-Hypothesis 2c. Relational capital positively affects organizational learning capability. Persons with more relationships and networks may exhibit better information acquisition and resource allocation. This connectedness may improve a firm's technology development capability. Maintaining and creating stable relational capital requires that a firm build up good interactive relationships with its stakeholders, customers, and suppliers [3].

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4 Methodology
In order to empirically examine the hypothesis relationships, the research constructs were operationalized. A preliminary version of this questionnaire was designed for this study. An expert interview was conducted to investigate whether or not the questionnaire items are representative of the items. A pilot study was conducted to ensure the reliability and validity of questionnaire. The final version of the questionnaire items was refined through a process of purification. Khorasan Razavi Regional Water Authority were selected for this study. The respondents were asked to express their perceptions on intellectual capital, OLC.

4.1 Sample and Data Collection Procedure
We tested our hypotheses within the context of the Khorasan Razavi Regional Water Authority. The questionnaire was addressed to the employees. We received a total of 150 valid questionnaires, which represents 61 percent of the study population. Both the number of responses and the response rate can be considered satisfactory.

4.2 Measurement Model
Table.1 lists descriptive statistics including means, standard deviation, correlations and Cronbach's \( \alpha \) value. Table.1 clearly shows that new product development performance has significantly positive correlations with human capital, structural capital, relational capital, and organizational learning capability. The Cronbach's \( \alpha \) for human capital, structural capital, relational capital, organizational learning capability, is 0.8642, 0.8428, 0.8826, and 0.7904 respectively. Goodness-of-fit indices shown in Table.2 \( (x^2/df) \) smaller than 2, RMSEA smaller than 0.10; GFI lower than 0.9 indicate that the fit values of the model are satisfactory. The \( (x^2/df) \) in this study meets the standard criteria, because \( x^2/df \) that is lower than 2 reveals a good fit according to the informal rule-of-thumb criteria.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean</th>
<th>SD</th>
<th>HC</th>
<th>SC</th>
<th>RC</th>
<th>Cronbach's ( \alpha )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human capital</td>
<td>66.47</td>
<td>10.606</td>
<td></td>
<td></td>
<td></td>
<td>0.8642</td>
</tr>
<tr>
<td>Structural capital</td>
<td>55.6</td>
<td>8.937</td>
<td>0.496</td>
<td></td>
<td></td>
<td>0.8428</td>
</tr>
<tr>
<td>Relational capital</td>
<td>23.38</td>
<td>5.293</td>
<td>0.258</td>
<td>0.333</td>
<td>0.06</td>
<td>0.8826</td>
</tr>
<tr>
<td>Organizational learning</td>
<td>61.59</td>
<td>7.519</td>
<td>0.388</td>
<td>0.488</td>
<td>0.06</td>
<td>0.7904</td>
</tr>
</tbody>
</table>
In Fig.2, estimate coefficient of relationship between the variables of intellectual capital and organizational learning capabilities. In Fig.3, T-Value a coefficient of relationship between the variables of intellectual capital and organizational learning capabilities. Fig.4, show Empirical results are studied in the statistics society.

4.3 Structural model

The second step of SEM analyzing the structural model is now performed, following the first step of testing the measurement model. Table.3 presents the test results for the proposed model paths. The results indicate that all paths are significant.
The test results in Table.3 and Fig.2 reveal significant t values is observed, relational capital has not significant relationship with organizational learning capability, but other dimensions have significant relationship with organizational learning capability. These results show how human capital links to relational capital and structural capital and relational capital links to structural capital. Two type of
intellectual capital (human capital, structural capita) links with organizational learning capability but relational capital not link with OLC.

5 Conclusions

Intellectual capital has recently attracted much attention from scholars, enterprises, and governments in practical applications and further discussion [4]. However, no relevant studies explore role of the relationship between intellectual capital in organizational learning capability. The role of OLC can be explained by the fact that when there are intellectual capital in organization, individual tend to work in conditions that propitiate their abilities (teamwork, risk taking, dialogue, participation, etc.), organizational learning capability might thus be considered as a stimulating working context, where there are intellectual capital, individual can develop their competencies and attempt to provide intellectual capital in their organization and increase organizational learning capability to enhance their employee higher performance [2].

References


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