A Structural Model of Organizational Intelligence Based on Knowledge Management in the Technical and Vocational Training Organization

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ABSTRACT

Background: The dire necessity of organizational intelligence is undeniable with regard to the importance of organizational intelligence in the Technical and Vocational Training Organization. In the other hand the effective factor leading to the organizations’ success does not only include capital, human force and raw material, whereas, it critically depends on the organization’s potential in producing the knowledge among the staff (Tanghoo, 2008). Objective: The research purpose is to construct a structural model to assess the organizational intelligence in the Technical and Vocational Training Organization of Tehran based on knowledge management. The population comprised all the employees of the Technical and Vocational Training Organization, out of which a sample of 226 employees was randomly chosen. The research instruments were two questionnaires which were administered in the Technical and Vocational Training Organization: Albrecht (2003) organizational intelligence questionnaire which consisted of 49 items with three underlying constructs of strategic vision, shared fate, appetite for change, heart, alignment and congruence, knowledge deployment and performance pressure with Cronbach’s Alpha of 0.88, and Sallis & Jones’ (2002) knowledge management questionnaire which consisted of 42 items with ten underlying constructs of vision and mission, strategy, organizational culture, intellectual capital, learning organization, leadership and management, teamwork and learning communities, sharing knowledge, knowledge creation and digital sophistication for the organization with Cronbach’s Alpha of 0.83. Results: The results of path analysis using LISREL software indicated that dimensions of knowledge management had a direct effect on organizational intelligence with the indices of 0.93. Conclusion: The model also showed that the factor of intellectual capital, leadership and management in knowledge management had the highest direct effect on organizational intelligence. It was also concluded that the proposed model appeared to be fully workable.

INTRODUCTION

One of roles of present era for the management and employees in an organization is intelligence. Also, the management and employees try to apply human capital and organizational capital for developed efficiency and effectiveness in their organization. Therefore, these goals will not be available unless all of them in the organization use intellectual capital as optimum. Most chief executive officers feel that knowledge is the most critical asset of their organization. In today’s movement, towards knowledge management, organizations try to leverage their knowledge internally in the organization and externally to their customers and shareholders. They try to capitalize on their organizational intelligence to maintain in the edge [15]. As a fascinating concept and intriguing research area, “intelligence” finds strong appeal in many disciplines outside of individuals and cognitive psychology [25]. One of the disciplines that provoked increased interest in the importance of intelligence is the management and organization development literature [12, 16, 24]. Even if we disregard the entire literature in which organizational intelligence was supposedly aggregated (Kurzman & Owens, 2002), the term is still ambiguous in the context of organizational development scholarship. This is true because there is a lack of a unified theory of intelligence in organizational settings as noted by the numerous and fragmented perspectives and ideas of researchers in the field [12]. Albrecht [3] designed a modal that includes seven key dimensions of organizational intelligence (OI):

- Strategic Vision: strategic vision refers to the capacity to create evolve, and express the purpose of the enterprise and not to any particular vision, strategy, or mission concept in and of itself.

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• Shared Fate: a sense as “We're all in the same boat” creates a powerful sense of community and esprit de corps. Without a sense of shared fate, the psychological tone of the culture degenerates into a “Look out for number one” spirit.
• Appetite for Change: Some organizational cultures, usually led by their executive teams, have become so firmly set in their ways of operating, thinking, and reacting to the environment that change represents a form of psychological discomfort or even distress.
• Heart: Separate from the element of shared fate, the element of heart involves the willingness to give more than the standard.
• Alignment and Congruence: In the intelligent organization the system, broadly defined, all come together to enable the people to achieve the mission.
• Knowledge Deployment: Knowledge deployment deals with the capacity of the culture to make use of its valuable intellectual and informational resources.
• Performance Pressure: It's not enough for executives and managers to be preoccupied with the performance of the enterprise, i.e. its achievement of identified strategic objectives and tactical outcomes. In the intelligent organization, everyone owns the performance proposition, i.e. the sense of what has to be achieved and the belief in the validity of its aims [3].

Having an efficient and thriving educational organization triggering appropriate opportunity to develop and flourish students is an important issue which occupied the mind of planners and scholars. Notably, nowadays organizations encounter rapid and astonishing changes and their survival depends on the ability to adapt to changes. Flexibility, ability to adapt, and enjoyment of individuals and organizational ability to utilize the experiences are most important in strategies of organizations. As changes are rapidly occurring, survival and function of an organization depends on accelerating learning and developing knowledge management. Although efficient application of the knowledge leads to formation of intelligent organizations, it rests on creative application of knowledge. Thus, educational organizations should simultaneously instruct knowledge, efficiency, and utilizing knowledge to the students to strengthen their potential talents. Organizational intelligence, therefore, is the most important ability to realize it. The necessity of organizational intelligence is undeniable with regard to the importance of organizational intelligence in the Technical and Vocational Training Organization. Hence, knowledge management takes on a pivotal role as an important resource in creating the competitive advantage. The effective factor leading to the organizations’ success does not only include capital, human force and raw material, whereas, it critically depends on the organization’s potential in producing the knowledge among the staff [27]. Organizations are bound to create an environment in which requiring, transferring and advancing the knowledge is facilitated among the staff members through enhancing the pattern of meaningful interactions [18].

Sallis & Jones [21] offer a useful knowledge management self-assessment checklist with scoring elements such as:
• Vision and mission: It refers to having vision as a knowledge-based organization and sharing it with the stakeholders and the mission as the knowledge creator and translating it into practical strategies.
• Strategy: It refers to developing modeled scenarios and applying them in the management.
• Organizational culture: It refers to the different dimensions of culture including the creating, centralizing, sharing, and recognizing organizational culture as a key competence.
• Intellectual capital: It includes recognizing the value of intellectual assets and codifying its tacit knowledge.
• Learning organization: Under learning organization, organization should create continuous learning, define skills to create new knowledge, recognize EQ and its influences encourage creative thinking, and promote action learning both for individuals and teams.
• Leadership and management: In leadership and management, organizations are required to have senior-management support, have knowledge leaders and managers with appropriate leadership styles, and develop strategies for promoting middle-managers.
• Teamwork and learning communities: Under teamwork and learning communities, organization should encourage learning communities and knowledge teams, establish trust, and recognize the need for intellectual autonomy.
• Sharing knowledge: It signifies that organizations ought to collect, record major organization events, and share new information, and understand competitors’ knowledge management system.
• Knowledge creation: It requires the organizations to recognize new knowledge, those known as experts, and turn it into service.
• Digital sophistication for the organization: In terms of digital sophistication, organizations are to develop technologies among its employees by clear technological architecture, enhancing its knowledge, and devising virtual collaborative systems and/or communities. (p.125-129)
Alici and Bahrololoum [4], in a research entitled “Analysis of Knowledge Management and Organizational Intelligence Relationships in Science and Technology Parks” show that organizational intelligence involves emotional, behavioral, and cognitive dimensions. The results suggest that it is not necessary for organizations to focus on the all dimensions, but the main concern should be based on the importance and performance of the knowledge management factors. Therefore, considering the efficiency of information systems and the senior manager’s commitment to the principles of knowledge management, achievement is provided in the short run for organizations.

Competitive advantage has been shown increasingly to rely on the effective management of knowledge [5,26]. This is particularly relevant for multinational firms, which may adapt not only the organizational structure of the subsidiary to the host country, but also its knowledge management practices in expanding abroad. Indeed, Drucker et al. [11] have identified “harnessing the intelligence and spirit of people at all levels of an organization to continually build and share knowledge” as a top priority for firms wishing to succeed in today’s competitive environment [8]. A prevailing perspective of knowledge management is the knowledge management value-chain common to many knowledge management descriptions [23,9,6]. The four stages of knowledge acquisition, storage/sharing, diffusion, and application, although not necessarily sequential, are required to achieve the efficiency function of knowledge management within the organization [2,10]. As such, the two goals of knowledge management are productivity gains through efficient decision making and problem solving, and innovation by way of bringing a new idea to market [13]. A previous thorough literature review of the history of knowledge management evolution from 1995 to 2004 [6] has showed that indeed the knowledge management process is similar to that of a value-chain. According to Chen and Chen [6], “the basic underlying assumption is that knowledge may be viewed from a unified perspective as it circulates in the organization creating knowledge assets and influences the performance of the organization” (p. 18).

Organizational intelligence is a new and important topic in organizational behavior and development scholarship. However, researchers should also investigate organizational intelligence empirically. The multidimensional and multifaceted nature of organizational intelligence can be tested by operationalizing information-processing capabilities, emotional capabilities and adaptive capabilities. Mendolson et al., [17], in their study, showed that organizational intelligence has a strong impact on the financial performance of organizations. Organizations with high organizational intelligence have gained more profit and progress. And also, they have captured external information, and ensured that the right decisions are made in these organizations. Mendolson [17] mentions that “Organizational intelligence has a strong effect on a company’s performance.” The study of Sattari Ghahfarrokhi is consistent with the present research, demonstrating that there are positive and significant relationship between knowledge management and organizational intelligence. The results of the research demonstrate how the types of customer knowledge available to an organization can be categorized by the perceived quality and the perceived accessibility of the knowledge. These findings contribute to the field of knowledge management by moving towards a theory of how customer knowledge is used by an organization, and how internal and external factors affect this utilization. Furthermore, this study raises awareness of the importance of a KMS in managing customer knowledge, including key aspects of its design and implementation [20].

**Methodology:**

**Purpose of the study:**

The duty of the Technical and Vocational Training Organization of Tehran is to provide the technical workers with necessary training they need in order to work in industrial factories. Because these training centers cover many areas in the whole country, the results of the present study can yield fruitful outcomes.

The purpose of the research is to construct a structural model to assess organizational intelligence in the Technical and Vocational Training Organization of Tehran based on the knowledge management. Regarding the purpose of the research, the researcher tries to answer the following questions:

**Research questions:**

1. What is the structural model of organizational intelligence based on the knowledge management in the Technical and Vocational Training Organization?
2. Which variable has the highest effectiveness on organizational intelligence?
3. How is organizational intelligence knowledge management effective on promoting organizational intelligence?
4. How much is the goodness of fit in this study?

**Method of the study:**

The research methods of the study are: library research to access the theoretical framework and the related literature; and the survey method to collect, classify, describe, and analyze the data. The population under investigation in this study consist of official staff working in 12 administrative districts of the Technical and Vocational Training Organization in Tehran. Regarding the minimum research sample required for the staff’s
group, 226 individuals were randomly selected, using simple random sampling method, and the same number of questionnaires were distributed among them.

The research instruments were as follows: organizational intelligence which was designed and developed based on the theory of Albrecht [3]. The organizational intelligence questionnaire consisted of 49 items with seven underlying constructs of strategic vision, shared fate, appetite for change, heart, alignment and congruence, knowledge deployment and performance pressure with Cronbach’s Alpha of 0.88, and Sallis & Jones [21] knowledge management questionnaire which consisted of 42 items with ten underlying constructs of vision and mission, strategy, organizational culture, intellectual capital, learning organization, leadership and management, teamwork and learning communities, sharing knowledge, knowledge creation and digital sophistication for the organization with Cronbach’s Alpha of 0.83. The results of the study were obtained through applying path analysis using LISREL software (See Fig. 1 for more details).

Results:

The data collected from the administration of the instruments were analyzed. These data included the different indexes of central tendency, variability and the distribution of staff’s groups, the staff members’ scores obtained from knowledge management and organizational intelligence questionnaires and their related components. The distribution of the staff members’ scores in the given variables had tendency toward normality.

As shown in Figure 1, the Lambda rate of external latent variable of knowledge management components was 0.38 for leadership and management, 0.23 for teamwork, 0.12 for sharing knowledge, 0.23 for knowledge creation, 0.29 for digital sophistication, 0.11 for vision and mission, and 0.01 for strategy, 0.08 for organizational culture, 0.39 for intellectual capital, and 0.17 for learning organization whose accumulation form the knowledge management variable with the effectiveness rate of 0.93. It means that 93% of the variation in the dependent variable of intellectual capital, Leadership and management is explained by a collection of these indexes. The variable of collective action indicates the highest amount of internal consistency in the external latent variable.
The Lambda rate of internal latent variable of organizational intelligence components was 0.35 for strategic vision, 0.04 for shared fate, 0.27 for appetite for change, 0.41 for heart, 0.22 for alignment and congruence, 0.54 for knowledge deployment, and 0.03 for Performance Pressure. Their accumulation form the organizational intelligence variable. The validity of variable indicates the highest amount of internal consistency in the internal latent variable. Since the model’s goodness of fit index is 0.92, it can be stated that it has an acceptable fit. The calculated index indicates the direct effect of knowledge management components on employees’ organizational intelligence. Moreover, the model shows that the highest direct effect is related to intellectual capital, and Leadership and management. Table 1 presents the indexes related to the model’s fit:

<table>
<thead>
<tr>
<th>Index</th>
<th>Rate</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewis-Tucker (Non-normed fit index)</td>
<td>0.92</td>
<td>High fit (more than 0.90)</td>
</tr>
<tr>
<td>Bentler-Bonett’s (Normed fit index)</td>
<td>0.91</td>
<td>High fit (more than 0.90)</td>
</tr>
<tr>
<td>Hoelter</td>
<td>0.73</td>
<td>High fit (more than 0.70)</td>
</tr>
<tr>
<td>Root Mean Square Error (RMSEA)</td>
<td>0.042</td>
<td>High fit (equal to or less than 0.05)</td>
</tr>
<tr>
<td>GFI</td>
<td>0.92</td>
<td>High fit (more than 0.90)</td>
</tr>
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</table>

The goodness of five fit indexes presented model’s fit and empirical data. Therefore, desirability adaptation is provided for the designed model and empirical data and can approve it as an appropriate model for the organizational intelligence. On the whole, it can be proposed that this proposed model has full fit since Lewis-Tucker’s non-normed fit index (0.92) and Bentler-Bonett’s normed fit index (0.91) were both higher than 0.90. Besides, Hoelter’s index (0.73) was higher than 0.70 and shows high fit. The root mean square error (RMSEA) (0.042) was lower than 0.05 and goodness of fit (GFI ) (0.92) was higher than 0.90 and indicate the new model’s fit.

Discussion:

The results of path analysis method revealed that dimensions of knowledge management have positive impact on organizational intelligence. The findings of the present study, furthermore, indicated the influential role of knowledge management on organizational intelligence. The results of this study are in line with the studies done by [19,7,28]. Aliei & Bahrololoum [4] show that knowledge management involves social, emotional, behavioral, and cognitive dimensions which invest on the two factors contributing to the efficiency of information systems, and the senior manager’s commitment can earn the most achievements in the short run for organizations. An important work of organizations should be to invest on intelligent personnel, so that the organizational operations become more efficient and effective than before. In general, it is inferred that intelligence is an undeniable factor for organization's intellectual capital, because the first condition to each organization to be successful is having intelligence [28]. A common thread in this body of work is that knowledge management processes are positively related to performance. These results have been shown to hold for many performance variables including long term measures such as firm market value [7], and other non-financial indicators of performance such as new product launch success and increasing rate of sales [19].

As it was mentioned earlier, the unique outcomes of the present study indicate the direct effect of knowledge management components on organizational intelligence in the Technical and Vocational Training Organization of Tehran. Moreover, the model shows that the highest direct effect is related to intellectual capital, and Leadership and management. Moreover, through offering, guaranteeing and expanding the most efficient and superior services to Technical and Vocational Training Organization located in Tehran, and also identifying and fulfilling their needs, their satisfaction can be fulfilled and their loyalty can be engendered. Furthermore, considering the fact that intellectual capital exerts the most principal effect on the organizational intelligence, it can be suggested that in the Technical and Vocational Training Organization:

- Intellectual capitals should be appreciated and used appropriately by organizations;
- Organizations should seek tacit knowledge (individual’s aggregate behaviors, experiences, aspirations, values, and feelings);
- Existing challenges to the practice of knowledge management should be resolved by people in charge;
- Leaders of organizations had better be knowledge leaders who choose appropriate leadership styles to apply, and distribute knowledge;
- Some employees of the Technical and Vocational Training Organization should be trained to develop knowledge creation process.

Conclusion:

In conclusion, the newly-proposed results in this research that show the direct effect of knowledge management components on organizational intelligence, can be effectively employed to enhance the organizational intelligence in similar organizations. It can be done through strengthening the knowledge management indexes, that is, vision and mission, strategy, organizational culture, intellectual capital, learning
organization, leadership and management, teamwork and learning communities, sharing knowledge, knowledge creation and digital sophistication.

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