Study of the Relationship between the Organizational Learning and Organizational Innovation at University of Tehran

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Abstract

The present study was conducted in to study of the relationship between the organizational learning and organizational innovation of experts at the University of Tehran. Using the Neef Organizational Learning Questionnaire and a Researcher Questioner found that there was a positive and significant relationship between the organizational learning and organizational innovation. The results of correlation test showed that there was a positive and significant relationship between all the elements in organizational learning and the organizational innovation. These results also showed that there was a positive and significant relationship between organizational learning and all the organizational innovation dimensions (i.e. product innovation, process innovation, and administration innovations). The results of regression analysis also showed that four elements of organizational learning explained the changes in the organizational innovation (standard variable). And, as the elements systemic thinking, common perspective, and staff's competences and skills played no significant role in predicting the organizational learning, they were removed from the equation.

As the organizations entered the IT age and saw great developments around them and as these developments were instable, variable, and unpredictable, preserving their competitive advantage and enhancing their capabilities and developments depend on using the opportunities in competition with other organizations. Using these opportunities is only possible when a careful study an analysis of the environment is done. So, by studying and analyzing the environment and acquiring knowledge about it, organizations show different reactions to these conditions. In other words, in such heterogeneous and unpredictable circumstances, either organizations can be absolutely obedient to the environmental and external conditions and only react to their variations, or they themselves cause variation in the environment and put it in the direction of their goals. The realization of these conditions and keeping the environment factor in your own direction occur only in the organizations which are characterized by development and innovation culture and prioritize new and innovative ideas of the organization's members. "In fact, considering the increasing rate of changes and scientific, technologic, social, and cultural variations, only the organizations which, in addition to arrangement with today society's variations, can predict the direction of change and variation in future and are able to arrange these positive variations in order to make a better future, are considered as successful and efficient" (Akhawan, Abu Ali, 2010). To avoid the death and stability and adapt to the outside instable and variable environment, organizations require the variation and innovation. The slogan "Ruin is waiting for you, unless you'll be innovative," is ahead of the managers of organizations.

Today's problems cannot be resolved with yesterday's solutions, and environmental conditions are so complicated, dynamic, and uncertain that without innovations, organization can't any more guarantee their long life. The most important tool that can help the organizations with this is the learning factor; because, it not only gets you prepared for
change leadership, but also may be the only competitive advantage for the survival and development of organizations. In fact, it can be said that not such a long time ago were the organizations acting under a constant and stable environment and it was nearly possible for them to predict the future events, so that managers could manage and organize an organization with certain conditions. But little by little, kinds of variations in science and technology, economy, culture, and politics influenced quickly on the organization. Organizational leaders found out that they should consider "learning" as a valuable phenomenon and, to succeed in realizing a better future, they should train the kind of organization which is constantly and effectively looking for learning and don't act impressionable against the challenges, so that it manages to survive (Gohe, 2003).

In fact, the increasing rate of development and innovation in all scientific and technical fields and their effect on all the organizational processes as well as the dominance of competitive conditions over the varied environment of business has changed the learning process in an organization into the most fundamental factor in preserving the organizations' competitive advantage in the present century, so that a lack of attention to the learning process in organizations and ignoring its advantages will cause a dark future full of challenges. Today, it can be said that creating a learning environment and increasing the competence and capability of human resources are the prerequisites for forming any organization, each member of which is looking for information about the need for change. This information leads to satisfying the needs and using the learned knowledge, in practice, for adapting a person and organization to the created changes in outside environment; because, learning enables the organizations to react more quickly and effectively to the dynamic and complex environment.

The innovation performance in small and medium firms has caught many attentions. It sounds like one of the differences among the organizations in utilizing the advantages taken of innovation is related to the organizational learning culture and ability. As knowledge and technology and business fields like virtual and under-network organizations developed, the economic entities grew, the business environment changed into a competitive and challenged one, and new paradigms emerged, so that the survival has become a serious problem for many entities. In such an environment, it's usual for the competitive advantages to change. It's said that learning in the new business paradigms is the most important competitive advantage (Ahmadi&Pishdar, 2010).

Organizational Learning

Organizational learning is one of the new concepts that has been seriously regarded by the experts in recent years. This process provides the possibility to utilize the past experiences for adapting an organization to the outside variable and instable environment and help the organization continue its activities. In such an environment, it's natural for the competitive advantages to be offered during the learning and education process in the level of staff and organizations. In other words, the basis of new paradigms is learning, and the successful organizations are the ones which learn sooner, better, and more quickly than their rivals and employ this learning in their working process. That's exactly why the organizational learning concept has been suggested in recent years and has remarkably grown (Alavi, 2010). However, considering the importance and development of the organizational learning concept, many experts have started studying and analyzing this concept and offered different definitions about the organizational learning some of which we will discuss in below.
According to Tempelton, et al (2002), the organizational learning is a number of organizational acts like knowledge acquisition, information distribution, information interpretation, and organizational memory that consciously or subconsciously influence on the positive organizational variation. Rodriguez, et al (2003), considering the learning function in behavior change, regards the organizational learning a collective process for supporting and protecting the organizational behavior change. According to Alerga & Chiva (2008), the organizational learning is a kind of process through which the organization learns and this learning means every change in organizational models that leads to the improvement or preservation of organization performance. According to Dajson (1993), the organizational learning is a method created, completed, and organized by organizations, so that the knowledge and normal business processes related to the activities as well as the improvement of an organization capability develop through employing the great skills of work force (Lamsa, 2008).

It's generally said that the organizational learning is a dynamic process which enables an organization to adapt quickly to the changes. This process includes the production of new knowledge, skills, and behaviors. The organizational learning is the main way to produce knowledge-based work and improve the organization capability. A successful organization, therefore, should act dynamically in the case of learning (Zhang, et al, 2009). Although, it seems that every definition in this group discusses the organizational learning topic in a special point of view, they all concentrate on the cognitive change and have defined the organizational learning as some kind of process that consists of a few levels. So, the organizational learning is a concept used to explain the kinds of processes and activities which are done in an organization (Allameh, and Moghadami, 2009). In other words, the organizational learning can be regarded as a dynamic process including the knowledge creation, acquisition, and collection with aim to the development of resources, and capacity that leads to the better performance of organization (Perez Lopez, 2005). Haber (1991) believes that the organizational learning process consists of a number of levels as follow:

1. Knowledge acquirement: learning occurs the time when an organization acquires the required knowledge. The acquisition of knowledge, facts, and information is performed through the environment control, the use of information systems for saving and recycling information, conducting researches, performance, education, and like that (Heydari Tafreshi, et al, 2002).
2. Information distribution: in these processes, the organization share information between departments and individuals. In other words, the information distribution refers to a process through which the organization commonly shares the acquired information between its departments and members and therefore, the learning rate grows and new knowledge is created (Allameh, and Moghadami, 2009).
3. Information interpretation: in order for information to be used commonly, it should be analyzed and interpreted. Information interpretation is a kind of process through which the information gets understandable and common meanings (Heydari Tafreshi, et al, 2002).
4. Organizational memory: refers to a repertoire in which the knowledge is stored for the use in future. Some part of the organizational memory exists in the mind of people who have managed to acquire knowledge by their own experience. Some part of this knowledge can be found in organizational culture; because, organizational culture includes past experiences that affect people.
The information technologies which are used in storing the information also form some part of the organizational culture (Allameh, and Moghadami, 2009). Various models in relation to the organizational learning dimensions like the organizational learning model of Kraiters, et al (2001), organizational learning model of Hit (1995), organizational learning model of Thomas (1996), organizational learning model of Denton (1998), organizational learning model of Marquardt (2002), organizational learning model of Senge (1990), organizational learning model of Gervin (1993), organizational learning model of Bent and Ubrain (1994), organizational learning model of Gahe (1998), and organizational learning model of Yung, et al (1999) each of which can be studied separately, were studied (Allahyari, 2010), but considering the generality and modernity of the organizational learning dimensions offered by Neef (2001), this model was finally selected as the organizational learning elements. The organizational learning dimensions by Neef contains common perspective, organizational learning culture, team work and learning, knowledge sharing, systemic thinking, collaborative leadership, and development of the staff's skills and competences (Moshabaki, 2008).

1. **Common perspective:** the ability to create a common image or ambition from the future we are looking for (Senge, 1990). Common perspective helps staff to move along a common identity and feeling; because, it gets the staff prepared for learning with a convincing and firm reason (Sharifi&Islamiyeh, 2008).

2. **Organizational learning culture:** when the members of a society, organization, or group try to adapt to the outside problems and solve the interior unity problems, they are subconsciously learning. It is because theoretically, learning and problem solving are not only different but also that different points of view, have the same basic process (Khanalizade, 2008).

3. **Team work and learning:** in team work and learning, in order to avoid wasting energy, the importance of unity among the organization's staff and forces is emphasized. Collective learning is a process during which the capacity of team members has been developed and aligned in such a way that the result is what everyone really expects to be (Senge, 1990).

4. **Knowledge sharing:** includes knowledge transfer and distribution, and organizational and technological transfer of data, information, and knowledge. The capacity of an organization for knowledge transfer demonstrates the capability of transferring and sharing the power which is also considered as a necessity for the firm to succeed. Knowledge should be carefully and quickly distributed throughout the organization or the firm's areas (Marquardt, 2006).

5. **Systemic thinking:** is using a systemic method in analyzing and administrating an organization's affairs and paying attention to the impact of organizational factors on each other. In a holistic thinking, marketing activities and generally, other human efforts are regarded as systems. They are constrained by the related activities; the kinds of activities which normally take a few years to influence completely on each other. As we form some part of this system, we'll go through so many problems to understand the change model. (Senge, 1990).

6. **Collaborative leadership:** the outcome of collaborative leadership is that the personnel feel like partners. The result of such an attempt is the fact that they feel like they're useful and necessary members. The studies have indicated that partnership decreases resistance against the change, increases the commitment to the organization, and lowers the mental pressure (Khanalizade, 2008).

7. **Development of the staff's competences:** the competence in human resources literature is a collection of knowledge, skills, and ponderable and observable behaviors which contribute
to a job or title success. In order to manage human resources appropriately, we should promote the level of knowledge, information, skills, and capabilities in staff and make them feel competent. The development of human resources cannot be accomplished by lots of education, but human resources should act in a planned and systemic way (Khanalizade, 2008).

Any way today, the organizations' needs for learning and change has increased. If an organization learns more slowly than the outside environment, its death is inevitable. Therefore, all the available organizations should be learners (Aggestam, 2006). To be able to survive, the organizations has to increase their learning rate more than the degree of environmental changes and this fact shows the importance of organizational learning much more. We should know that organizations as collections of people and human groups are subject to the fast and quick environmental variations and they gradually learn some things in the area of their actions and activities. In other words, organizations like people should also be able to learn. In fact, we can say that learning is the most important way to improve the performance within a long time, and only the organization which utilizes accurately the capabilities, commitment, learning capacity of people in all levels of the organization can claim superiority in a near future (Akhawan & Abu Ali, 2010).

**Organizational Innovation**

Today, the innovation has caught the attention of many scientists and researchers from different majors and it is of great importance in the modern and varied organizations which are completely prepared for competition to the rival organizations and maintaining their position in this variation cycle. Because, the innovation is regarded as a critical factor in organizations to create values and stable competitive advantages in the today's complicated and variable environment. The organizations with greater innovations will act successfully in response to the variable environments and in the creation and development of new capabilities which let them get a better performance (Bromand & Ranjbar, 2009). In the world today, the ability of change administration and adaption is considered as the main factor in the success and survival of every organization and the acquisition of these abilities require requires the organizations to care about the people's creativity and innovation. Successful organizations are those in which the innovation is regarded as their first policy (Ahmadi, 1999). In other words today, in order to survive, the organizations must be dynamic and their managers and staff should be creative and innovative people, so that they can adapt the organization to these variations and be responsible for the society needs. In fact, it can be said that in the system of world economy and current increasing competition, the creativity and innovation are the key elements in the survival and success of an organization (SamadAghei, 2007).

The innovation concept has been regarded by many researchers. According to Yung (2006), this concept was firstly introduced by Shumpeter (1934) and was applied as the process of creating new business brands, products, and services. Since then, different scientists have offered different explanations for this concept during the long life of the organizations. So, the innovation is considered as a very important factor in organizations survival. Generally, the theoretical discussions related to the innovation concept are, in fact, some versions of two considerable approaches: the purpose-oriented approach; that only concentrates on the innovation itself, and subject-oriented approach; that concentrates on the subjects like
country, industry, organizations, and teams which have created and performed the innovation projects (Kaha, et al, 2009).

Some of the researchers like Van Di Van (1986) have defined the innovation as an activity which is about offering an idea concerning the development and thereby, performing, reacting, and changing it, if necessary (Kaha, et al, 2009). According to Van Di Van, the innovation process is much more than just creating a new idea; in addition, it contains the activities involved in the development and process. In fact, the innovation process is the development and performance of new ideas by the people who are involved in changing the underlying or organizational fields in cooperation with others (Wong, 2004). According to Efah (1998), the innovation is the use of new technical and performing knowledge in order to offer new products and services to customers. Therefore, it can be concluded that the innovation is defined as any new method in organizations that contains equipments, products, services, processes, policies, and projects (Yu Lin, 2007). The innovation is the invention of new knowledge and marketing ideas in order to facilitate the production of new products, improve the internal business processes, and make a market based on the products and services. The innovation includes both the fundamental and developmental innovations (Baregheh, et al, 2009).

The researchers and experts also mention various dimensions for the innovation. In this case, Daft (1994) proposes a two-core model for it. These two cores are the technological and administrative innovations. Copper (1994) has offered a multidimensional model. These dimensions are: radical innovation vs. gradual innovation, technologic innovation vs. administration innovation, and product innovation vs. process innovation. However although, there are different divisions in case of the innovation dimensions, radical, gradual, product, process, administration, and technologic dimensions can be mentioned as the innovation dimensions (Utterback, 1994).

Having studied the scientific researches and ideas in case of the innovation models, the elements which were more common among the researchers and experts, have been selected as the research elements in this study and the following ones have been mostly emphasized in comparison with others.

1. **Product innovation**: provides a tool for the production and refers to developing and delivering the new and improved products and services (Ojasalo, 2008). In fact, we can say that the meaning of product innovation is the extent which an organization pioneers the presentation of new services, the allocation of financial resources to a research, development, etc.
2. **Process innovation**: provides some tool in order to protect and improve the quality and save the expenses (Jimenez-Jimenez, 2008) and includes making new or improved methods in the production, distribution, or delivery services. In fact, the meaning of process innovation is the extent which an organization employs the new technologies and experiments the methods related to the performance. The process innovation is changing the methods of business performance or producing products and services. In fact, this kind of innovation refers to everything that changes the performance and business design methods (Siguaw, 2006).
3. **Administration innovation**: refers to the approaches, policies, new organizational forms (Jimenez-Jimenez, 2008), and new structural and administration processes (Siguaw, 2006) and contains the changes which affect the policies, resources allocation, and other
factors related to the organization's social structure (Daft, 1994). In fact, the administration innovation is the extent which the organizations' managers employ the modern managing systems in administration.

Considering the organizations' efficiency and leadership through creativity, quality, originality, and flexibility, the analysis of several studies shows the consistent effects of organizational innovations on the business performance. One of the reasons why learning is also considered critical for the organizations success is that learning facilitates the improvement and development of processes and new products (Baker & Sinkula, 2002). The organizational learning with its consequences is often regarded as one of the innovation antecedents (Carneiro, 2000; Darroch & McNaughton, 2002; and Crossan & Apydin, 2010).

The underlying assumption about the relationship between the organizational learning and organizational innovation is that the firms and organizations which are able to refresh their knowledge, are more likely to understand the consequences created by the environmental changes and respond more quickly and appropriately to these changes than their rivals (Tippins & Sohi, 2003). Briefly, the organizational learning can increase the organizational innovation by the knowledge development, acquisition, transfer, and application. In other words, empirical studies consider the organizational learning as one of the organizational innovation antecedents (Darroch & McNaughton, 2002).

In a research, entitled "Organizational Learning and Organizational Innovation Capabilities: the Role of Knowledge as a Broker," Chang, et al (2010) studied and analyzed the relationship between the organizational learning and organizational innovation. The results showed that the organizational learning capabilities positively and significantly associate with the organizational innovation. In other words, the organizational learning capability is considered as one of the essential as well as facilitating elements for the organization that can be conductive to the growth and innovation. So, the spread of learning culture among an organization's members leads to the production and innovation of knowledge systems and new creative ideas in the organization that finally generates the innovation.

Aragon-Correa, et al, (2007) believe that the market-oriented learning and self-learning (OL) are the basic factors that influence on the organizational innovation. However, they believe that the innovation by the organizational learning has also an impact on the organizational performance and increases it. However, in addition to examining the relationship between the organizational learning and organizational innovation, they analyzed and explored the relationship between the transformative leadership and organizational learning in this study, results of which indicated a significant and positive relationship between the transformative leadership and organizational learning. That is, the transformative leadership directly affects the organizational learning. Yu Yuan, et al, (2010) have also examined the effects of organizational learning on the innovation. Their study, titled "Effects of Organizational Learning on the Innovation Performance of Major Industries," concluded that the organizational learning has a direct and positive impact on the innovation performance in an organization. That is, the organizational learning increases the organizational performance by developing new capabilities. In other words, the organizational learning improves the innovation efficiency, ability, and performance by the knowledge development (Tsai, 2006). The results of this study also confirmed the results of previous studies which had been carried out by Hung, et al, (2009) and Baker & Sinkula (1999).
In their study, titled "Innovation, Organizational Learning, and Performance," Jimenez-Jimenez and San-Valle (2010) examined the organizational learning effects on the innovation as well as the performance. Their findings showed that the organizational learning and innovation are contributing directly to the organizational performance increase. The organizational learning also affects the organizational innovation. The findings, however, showed that the organizational learning effects on the innovation are higher than the organizational performance.

In a study, Thrin (2002) concluded that the organizational learning is related to the innovation in the small but high-tech organizations. In other words, the presence of continuous learning in the small high-tech firms results in the knowledge creation at different levels of organization, or generally, the use and application of knowledge and intellectual assets of people and organizations which in turn, leads to the innovation performance in the individual and organizational innovation (Jimenez-Jimenez & San-Valle, 2010).

However, many authors consider the organizational learning as one of the factors influencing the organizational innovation and believe that only the organizations which could establish the organizational learning in an organization are able to achieve the organizational innovation. This fact has been considered in this study.

**Research Questions**

1. Is there a significant relationship between the organizational learning and organizational innovation of experts in University of Tehran?
2. Is there a significant relationship between the organizational learning elements and organizational innovation of experts in University of Tehran?
3. Is there a significant relationship between the organizational learning and the organizational innovation elements (product, process, and administration innovations) of experts in University of Tehran?
4. Are the organizational learning elements able to predict the organizational innovation?

**Research Tools**

Organizational learning questionnaire: the first tool used in this study is the organizational learning questionnaire by Neef, et al, (1990) which includes the following seven dimensions: common perspective, organizational culture, team work and learning, systemic thinking, knowledge sharing, collaborative leadership, and development of the staff's competences. The questionnaire contains 31 statements and is set within a five-option range. This questionnaire's ending is 0.94 on the basis of Korenbach alpha, indicating the acceptable credit of this questionnaire.

Organizational innovation questionnaire: the second questionnaire which is prepared by the researcher is about the evaluation of orientation toward the organizational innovation. Considering the three product, process, and administration dimensions, this questionnaire has been designed in the five-option Likert scale, contains 17 questions, and is a combination of the questioners by Jimenez-Jimenez (2008), Prajogo & Sohal (2006), and Panayides (2006) which have been codified and designed by the researcher. This questionnaire's ending also is 0.87 on the basis of Korenbach alpha, indicating the acceptable credit of this questionnaire.
Population, Sample, and Sampling
The statistical population consists of managers and workers in the University of Tehran's staff circuit. The middle managers include general managers, assistant general managers, and assistant managers and the base principals include department heads, office assistants, experts, and staff. According to the latest statistics and data available, the total number of managers and staff in the University of Tehran's staff circuit is 400. Since it was not possible to study and examine all the personnel available in the University of Tehran's staff circuit due to the time constraints, financial problems, and large population size, a sample was selected by the simple random sampling from the population whose 132 ones were selected according to the formula of Sarayi, et al, (1991).

Data Analysis
Given the normal distribution of the samples has been approved by using the Kolmogrov-Smirnov (K-S) test, the parametric tests were applied in the influential statistical analyses to analyze statistically the research questions. In this study, both the descriptive and inferential statistics have been used for the data analysis. Having extracted the data for the questionnaire, firstly, the descriptive methods have been used in case of the research variables for the demographic studies and then, the inferential statistics have been used for the research questions to be answered. The statistical methods used in this study either a redescriptive including frequency, percentage, mean, and standard deviation or inferential including the Pearson and Regression correlation coefficients. The Pearson correlation coefficient was used to assess the relationships and the stepwise multiple regressions were applied to show the possible predictiveness of the organizational innovation by the organizational learning elements. Based on the descriptive indicators, the sample consists of 53 males and 77 females. In the case of education, 21.12% of them had a diploma degree, and 50.9% had an AM degree or higher.

Research Findings
Research Question 1: Is there a significant relationship between the organizational learning and organizational innovation?

Table 1
Correlation between the organizational learning and organizational innovation in the University of Tehran's staff

<table>
<thead>
<tr>
<th>Variable</th>
<th>organizational innovation</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational learning</td>
<td>0.72**</td>
<td>0.01</td>
</tr>
</tbody>
</table>

** indicates that the correlation coefficient is significant at the level 0.01.
* indicates that the correlation coefficient is significant at the level 0.05.

As you can observe in the table above, there is a direct and positive relationship (r= 0.72) between the two organizational learning and organizational innovation variables that is significant at the level of alpha 0.01. In other words based on this perspective, the presence of organizational learning in every organization leads to the increased innovation.

Research Question 2: Is there a significant relationship between the organizational learning dimensions and organizational innovation?
Table 2  
*Correlation between the organizational learning dimensions and organizational innovation in the University of Tehran's staff*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Team learning</th>
<th>Knowledge sharing</th>
<th>Leadership</th>
<th>Organizational culture</th>
<th>Common perspective</th>
<th>Staff competence development</th>
<th>Systemic thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational innovation</td>
<td>0.64**</td>
<td>0.731**</td>
<td>0.54**</td>
<td>0.57**</td>
<td>0.62**</td>
<td>0.45**</td>
<td>0.65**</td>
</tr>
</tbody>
</table>

** indicates that the correlation coefficient is significant at the level 0.01.  
* indicates that the correlation coefficient is significant at the level 0.05.

Considering Table 2, it can be said that there is positive and significant relationship between all the dimensions of organizational learning (team learning, knowledge sharing, leadership, organizational learning culture, common perspective, development of the staff competences, and systemic thinking) and the organizational innovation. Correlation ratios for the variables above are 0.64, 0.73, 0.54, 0.57, 0.62, 0.45, and 0.65, respectively. These ratios are significant at the level of alpha 0.01. In other words, we can say that the presence of each dimension of organizational learning can lead to the increased innovation in the organization.

3rd question: is there a significant relationship between the organizational learning and the organizational innovation dimensions?

Table 3  
*Correlation between the organizational learning and the organizational innovation dimensions in the University of Tehran's staff*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Product innovation</th>
<th>Process innovation</th>
<th>Administration innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational learning</td>
<td>0.70</td>
<td>0.56</td>
<td>0.77</td>
</tr>
</tbody>
</table>

** indicates that the correlation coefficient is significant at the level 0.01.  
* indicates that the correlation coefficient is significant at the level 0.05.

Considering Table 3, it can be said that there is positive and significant relationship between the organizational learning and the organizational innovation dimensions. The correlation ratios for the variables above are 0.70, 0.56, and 0.77, respectively. These ratios are significant at the level of alpha 0.01. In other words, it can be concluded that the presence of each dimension of organizational innovation leads to the increased innovation in the organization.

Research Question Three: Do the dimensions of organizational learning influence on the organizational innovation?

Table 4  
*Results of Stepwise Regression for Predicting Organizational Innovation*
In response to the 4th research question, regarding whether the organizational learning dimensions (team work and learning, knowledge sharing, leadership, organizational learning culture, common perspective, development of the staff’s skills and competences, and systemic thinking) are able to predict the organizational innovation in the University of Tehran’s experts and to determine the contribution of each of the predictive variables in the prediction of organizational innovation, stepwise regression was used. According to Table (4), it can be concluded that among the organizational learning dimensions, four dimensions knowledge sharing, organizational learning culture, team work and learning, and leadership, as the predictive variables, have the required criterion for the entry into the Regression's final equation due to the explanation of organizational innovation changes (standard variable). As you can observe in the table above, in the step one which has entered the equation after the knowledge sharing dimension, the ratio of correlation coefficient is 0.72. It means that the knowledge sharing dimension could explain the variance 0.52 in the organizational innovation. In step two, adding the second dimension, that is, organizational learning culture, to the equation, the ratio of correlation coefficient has increased to 0.77; that is, these two dimensions together have explained the variance 0.55 for the organizational innovation. And in step three, adding the third dimension, that is, leadership, to the equation, the ratio of correlation coefficient has increased to 0.78; that is, these three dimensions have explained together the variance 0.61 for the organizational innovation. Finally in step four, adding the fourth dimension, reliance, to the equation, the ratio of correlation coefficient has increased to 0.80; that is, these four dimensions altogether have explained the variance 0.62 for the organizational innovation. Since the dimensions "development staff skills and competences, common perspective, and systemic thinking" haven’t participated in increasing the correlation ratios, they've been removed from the final equation. In addition, in order to determine the contribution of each of the organizational learning dimensions (knowledge sharing, organizational learning culture, leadership, systemic thinking, and team work and learning) in the prediction of the organizational innovation based on the regression coefficients (Beta) in step four, it can be stated that the contribution of knowledge sharing, organizational learning culture, leadership, and team work and learning has been 0.42, 0.22, 0.17, and 0.16, respectively. Other dimensions also have been removed from the equation, because of having no significant contribution to the prediction of the organizational innovation.

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictor variables</th>
<th>$R$</th>
<th>$R^2$</th>
<th>$B$</th>
<th>Beta</th>
<th>$T$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step one</td>
<td>Knowledge sharing</td>
<td>0.72</td>
<td>0.52</td>
<td>0.44</td>
<td>0.71</td>
<td>11.65</td>
<td>0.000</td>
</tr>
<tr>
<td>Step two</td>
<td>Knowledge sharing&lt;br&gt;Learning culture</td>
<td>0.77</td>
<td>0.55</td>
<td>0.35</td>
<td>0.57</td>
<td>8.85</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.17</td>
<td>0.32</td>
<td>4.96</td>
<td>0.000</td>
</tr>
<tr>
<td>Step three</td>
<td>Knowledge sharing&lt;br&gt;Learning culture&lt;br&gt;Leadership</td>
<td>0.78</td>
<td>0.61</td>
<td>0.31</td>
<td>0.51</td>
<td>7.77</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.13</td>
<td>0.25</td>
<td>3.94</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.16</td>
<td>0.18</td>
<td>3.01</td>
<td>0.003</td>
</tr>
<tr>
<td>Step four</td>
<td>Knowledge sharing&lt;br&gt;Learning culture&lt;br&gt;Leadership&lt;br&gt;Team learning</td>
<td>0.80</td>
<td>0.62</td>
<td>0.26</td>
<td>0.42</td>
<td>5.70</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.12</td>
<td>0.22</td>
<td>3.42</td>
<td>0.001</td>
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Conclusion

The innovation performance in small and medium firms has been regarded by many of researchers. It seems that one of the differences available between the organizations in utilizing the advantages taken of the innovation lies in the power and culture of organizational learning. With science and technology development and expanding the business areas, the economic entities have spread out, the business environment has become a competitive and environment full of challenges, and new paradigms have emerged, so that the survival is difficult for many entities and firms. It is in such a natural environment that competitive advantages change. Learning is expressed as the biggest competitive advantage in the new business paradigm (Ahmadi&Pishdari, 2010). In fact, the increasing rate of growth and innovation in all the fields of science and technology and their impact on all the organizational processes, and the domination of competitive conditions over the changing business environment, has changed the learning process in an organization into the most critical factor in maintaining the competitive advantage of the organization in present century, so that not caring about the learning process in organizations and ignoring its advantages will make them face numerous challenges and an uncertain future. Today, we can say that creating a learning environment and enhancing the competence and capability of human resources are needed to create an organization each member of which is looking for information about need for change. This information leads to satisfying the needs and using the learned knowledge, in practice, for according a person and organization with the created changes in outside environment; because learning enables the organizations to react more quickly and effectively to the dynamic and complex environment.

Given the importance of organizational learning in increasing the innovation in an organization, this study examines the relationship between the organizational learning and organizational innovation among the University of Tehran's experts. The following describes, in detail, the results of the relationship between these variables: the results of Pearson correlation coefficient showed a significant relationship between the organizational learning and organizational innovation in the University of Tehran's staff. These results are consistent with the findings of Aragon-Correa, et al (2007), Carneiro (2000), (Darroch&McNaugton (2000), Crossan&Apaydin (2010), Tsai (2006), and Yu Yuan, et al (2010).

One of the reasons why learning is critical for an organization success is that it facilitates the improvement and development of new processes and products (Baker &Sinkula, 2002). The organizational learning and its outcome, knowledge, are often regarded as the antecedents of the innovation (Carneiro, 2000; Darroch&McNaugton, 2000; and Crossan&Apaydin, 2010). The underlying assumption in the organizational learning and organizational innovation is that the firms and organizations which are able to refresh their knowledge, are more likely to understand the consequences of environmental changes and respond more appropriately and quickly to these changes than their rivals (Tippins&Sohi, 2003). In short, the organizational learning enhances the organizational innovation through the acquisition, transfer, and application of knowledge.

According to the findings, an organization's commitment to learning results in strengthening the learning culture in the organization. Due to an organization orientation to the knowledge creation, this culture has provided more opportunities for learning in the organization, and besides the knowledge development in people and their contribution to each other's knowledge, on one hand, and enhancing the capability of applying ideas, processes, or new
products, on the other hand, enhances the innovation capacity in the firms. Therefore, the organizations committed to the learning are able to raise their innovation capability and have more innovation capacity than their rivals, because of having knowledge and ability to understand and anticipate the customers' needs, commitment to the innovation, learning atmosphere, and embracing new ideas in the organization (Matofi & Ahmadyan, 2010).

More results indicated that there is a positive and significant relationship between the organizational learning dimensions (knowledge sharing, organizational learning culture, development of the staff skills and competences, common perspective, leadership, systemic thinking, and team work and learning) and the innovation variables. These results are consistent with the findings of Darroch & McNaughton (2002) and Tippins & Sohi (2003). In terms of the organizational learning and its dimensions, the management literature emphasizes its key role as the organizational learning preconditions (Carneiro, 2000). Several models have been proposed to explain the relationship between these two variables (Levin & Liunthal, 1990; Head Load, 1994; Kogut & Zender, 1992; Leonard Barton Sniser, 1998; March, 1991; and Noanko & Ta Ki Chi, 1995). In general, it can be said that the innovation requires individuals to acquire knowledge and then, share it within the organization (Jimenez-Jimenez, 2008). This literature not only reflects the positive impact of organizational learning on the performance, but also argues that this relationship is mediated by the innovation. In particular, some papers show that the organizational learning allows firms to develop their abilities (Baversad, et al, 2009).

Weisberg (2006) believes that the organizational innovation requires the application and combination of knowledge from various sectors. The knowledge which is shared with and transferred to others is used to facilitate and establish the innovation. Applying the knowledge in an organization, the organizations improve the existing products and generate new products which meet the customers' needs and desires. The more organizations take advantage of the existing knowledge in offering their products and services, the more they can explore the ideas which are known as opportunities (Hemati, et al, 2010).

More results indicated that there is a positive and significant relationship between the learning and organizational innovation elements (product, process, and administration innovations). In fact, we can say that the organizational learning results in inducing knowledge or a new idea and increasing the ability of understanding and applying them. The organizational learning can result in an organization progress when the organization determines its mission, customers, capacities, and strategies. This kind of learning will lead to the underlying innovation in the new products, services, and organizational processes (Javan-Mard & Dilmazi, 2010).

The results of stepwise regression analysis for the prediction of the organizational innovation through the organizational learning elements indicated that the elements "knowledge sharing, organizational learning culture, leadership, and team work and learning" are considered as the most important predictive ones for the organizational innovation and play a considerable role in predicting it. But the elements "common perspective, systemic thinking, and development of the staff's skills and competences" are not significant in predicting the organizational innovation in the University of Tehran's staff.

The innovation also includes the transformation and use of the available knowledge which requires employees to share their knowledge and information. As Noanko states that the
innovation occurs when employees share their knowledge within the organization and when this knowledge was shared, it invents common and new visions in a diverging and converging process (Leonard Barton Sniser, 1998) and new key capabilities (Kugot & Zender, 1992; Leonard Barton, 1995) which enhances the innovation in an organization (Jimenez-Jimenez, 2008). In fact, we can say that the knowledge sharing and conversion indicates a new combination of knowledge which can lead to the opportunity exploration and organizational innovation (Jiang & Yuan, 2009). The organizational innovation development and education stems from the organizational leadership which believes in the organizational innovation for survival of the organization. The organization's senior managers who have an effective leadership style can create a supporting and training environment for the innovation and act as a model in inspiring and motivating the employees to create innovative ideas (Makoei, et al, 2010).

References


