

Research Article

ANALYZING THE EFFECTE OF ORGANIZATIONAL LEARNING ON INNOVATION AND ORGANIZATIONAL PERFORMANCE

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ABSTRACT

The aim of present study is to investigate the analysis of organizational learning on innovation and organizational performance. Research method is reasonable solidarity. The study population is the staff of Islamic Republic of Iran Railways Company. The validity confirmed by professors and scientists and reliability was measured by Cronbach's alpha coefficient. 254 subjects were selected as samples by using Cochran method. Jimenez and Sons (2011) questionnaire is used to gather information. To analyze statistical data, structural equation modeling was performed using smartpls software. The results showed significant positive correlation between organizational learning with innovation and organizational performance in the company.

Keywords: *Organizational Learning, Innovation, Organizational Performance and Structural Equation Modeling*

INTRODUCTION

Many studies have shown that organizational learning efficiency through high objective capacity promotes innovation. Innovation is often the acquisition of knowledge in research and development (R & D) and other units of the company. Staff learning ability increases absorption and assimilation of internal information. Also improves the ability of an organization to learn, and enhances the effectiveness, efficiency and capability of innovative activities. Companies with desire to learn can analyze the external environment to the new technology paradigm that leads to innovation. In addition, innovation becomes as a process to resolve the problem (Fazollahi *et al.*, 2012).

The notion of organizational learning impact on organizational learning has emphasized the importance of the facilitator. These facilitators in organizational learning and learner organization studies have been expressed by various researchers (Alegre and Chiva, 2008). Organizational learning capacity in an organization means the achievement of recovery. Organizational learning by Cooper (2000), Damanpour (1991) and Verona (1991), not only provides more opportunities for learning and sharing knowledge in each other through the expansion of learning throughout the organization and increases implementation power of ideas, processes or new products, but can enhance the ability of the organization in innovation (Karimi *et al.*, 2013).

Innovation is the process of collecting any new and useful ideas to solve the problem that includes the development of ideas, adapting and implementing new ideas in the process, products and services (Kenter, 2007) and also raises the successful application of new ideas. Hence it is necessary to met two conditions at this point: Newness and usefulness. In general, newness prerequisites are various because the process of innovation for a recently invention fulfills a practical exploration or production technology or a new management. Prerequisite for usefulness can be achieved practically through its commercial success (Alegre and Chiva, 2009). Innovation is a growth and promising path of the organization. It is also necessary to maintain the competitiveness and ensure the organization's future potential (Krause, 2004).

Organizational knowledge creation process that is located along organizational learning is one of the foundations of innovation. In this process, the creation of new knowledge itself is not important but the process strengthens the innovation. Organizational innovation relates to the company's knowledge base. This knowledge base is reinforced by organizational learning (Cohen and Levinthal, 1990).

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The organization that believes in learning process gains high capacity to understand the weaknesses and strengths of competitors and learns from successes and failures through increment of innovation abilities and by prediction and understanding customer needs and also through new and practical technology for innovation creation which causes the firms to lose less customer requirement chance. Organizational learning supports creativity (Sanchez and Mahoney, 1996), suggesting new ideas and knowledge and increases the ability to understand and implement (Damanpour, 1991).

Organizational Learning

All people have the capacity to learn and can adapt itself to a changing environment through learning. Learning introduces insights and new concepts to human. Organizational learning occurs when members of an organization will to use learning to solve problems. Each of the organizations based on their characteristics and personnel has ways of learning (Phang *et al.*, 2008). Organization learning start thanks to the collective development of management theory, such as Adam Smith, Taylor, and the learning curve and etc. (Templeton *et al.*, 2002). Organizational learning is the process of finding of errors and common mistakes and to correct them through a shared and mental vision. These mental and knowledge patterns are the result of experience and background knowledge and events.

Organizational learning has been described as a process of knowledge acquisition as well as performance improvement that occurs over time (Liao *et al.*, 2008). Survival and development of organizations in the world today requires the ability to timely and appropriate response to successive changes in the environment. Only organizations are able to predict their needs and environmental changes in a timely manner and continue their survival in a constantly changing environment that they are emphasizing organizational learning (Zadeh *et al.*, 2010).

According to the definition of Peter Senge, learning organization is classified in two main groups:

A- Cognitive

B- Behavioral

The definition of cognitive includes knowledge, understanding and new insight, although the definitions are from special aspects, the concentrations are on cognitive changes and they all have defined organizational learning as a process involving several stages. Some of these definitions are introduces as follow:

1. Three-stage process of Daft and Weick (1984): organizational learning has been introduced in three stages:

A- Exploration and information gathering

B- Interpretation of data

C- Learning the practical use of information.

2. Nonaka and Takochi (1995) underlined organizational learning as organizational mastery on the knowledge in their activities. Their mastery of the knowledge process (Organizational Learning) consists of three stages:

A- the acquisition of knowledge (identifying and gathering useful information)

B- Application of knowledge (practical application of knowledge)

C- Transfer of knowledge (distribution and publication of knowledge throughout the organization).

3. Huber(1991) introduced organizational learning as follow:

A- identifying the need for knowledge

B- exchange and dissemination of knowledge

C- Adding knowledge to existing knowledge systems

D- Introduction and institutionalization of knowledge that are not necessarily successive stages.

Innovation

Innovation is the main condition to compete in the twenty-first century. Increasing competition, severe environmental upheavals, changes in technology and environmental uncertainty have forced organizations to accept innovation as part of its strategy (Slater and Narver, 1995). Innovation is a critical factor for enterprises to create value and has competitive advantage in today's complex and variable environment. Organizations with more innovation have better performance in response to changing environments and

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develop new features and they will be more successful. Innovation process includes acquisition, dissemination, and application of new knowledge. Acceptance of innovation exactly is relevant to an organization's ability to use and apply their knowledge (Bromand and Ranjbari, 2009). Recent studies have claimed that if an organization fails to maintain its innovation, it will face the failure (Daft and Krause, 2004). Organizational innovation is to create a usable and valuable products and services in the organization (Johannessen, 2008). Organizational innovation is organizations willingness for development of products and new services and providing them to market to gain the success (Gumsuluoglu and Ilsev, 2009). Organizational innovation is the acceptance of a tool, system, policy, program, process, product or service to be created inside the organization or may be bought from outside which is new for the organization (Damanpour and Evan, 1984). In other words, organizational innovation is the effective key to survival in a competitive environment (Lemmon, Sahota, 2004). This definition is very broad and encompasses them all. Innovation will have a positive impact on long-term success through increased flexibility, willingness to change and introducing new products and services and reducing inertia. Recent developments suggest that the concept of innovation is not simply the result of research and development activity. Moreover, innovation is a process that creates uncertainty and instability. The abilities should be renewed and strengthened, the division of resources should be changed, organizing should be revised and strategy should be reevaluated, therefore the used model is a very important (Vaezinegad and Sadeghi, 2008). So in many industries, companies are under enormous pressure to enhance their capabilities in the way of innovation. Even in today's tough economic situation, innovation is on the top list of management activities, although it is not expected by all to start the innovations from their own laboratories. "An organization does not rely only on his innovative, new technology, products, or product development process. Instead, companies need critical input from outside sources for innovation (Morris *et al.*, 2008).

Product Innovation: Product innovation provides a means of production and refers to the development and delivery of new and improved products and services. It can be said that innovation in production means the ability of an organization to provide the service and allocate financial resources to research and development and so on.

Process Innovation: Process innovation is a tool to keep and improve the quality and too save the costs and includes new methods with improved production, distribution or service delivery. In fact, process innovation is a method to show what level of technology has been used and how the new methods have been tested the process (MirKamali and Chopani, 2011).

Administrative Innovation: This kind of innovation deals with organizational structure and administrative procedures, in a way that administrative innovation in an organization is closely associated with the activities of the organization's administrative and indirectly with organizational work activities (Bahrami *et al.*, 2010).

Organizational Performance

Managers and organizational leaders in most organizations in the world have always sought to improve their organization's performance. Performance of an organization is a wide mix of intangibles receipts, such as increased knowledge and objective and tangible receipts, such as economic and financial results. Various models have attempted to identify and assess organizational performance. Analyses of these models show that: first, changes in organizational performance should be measured and assessed. Second, changes in the organization should be considered at all levels of the organization and goals of the individual, group and organization must be in line with corporate objectives. Third, different tools should be used for measuring various aspects of performance of organizations (Allame and Moghaddami, 2010).

Research Background

Researches of organizational learning show that learning has impact on firm performance and reduces the effects of other variables on the performance. Organizational learning improves survival and effectiveness of education, diversity and entry into foreign markets and increases customer satisfaction and facilitates innovation (Bioji, 2004). Slater and Narver (1995) showed that firms with permanent learning processes had got better chance to track and respond to customer needs, use more appropriate market opportunities

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and provide better final products and obtain the results that lead to high levels of profitability, sales growth and customer retention.

Rjeris and Schon (1978) argued that organizational learning increases innovative production capacity of organization. Astana (1989) argued that innovation can occur as a result of individual and organizational learning. Also Gribadez and Rajer (1999) found that organizational learning has positive relationship with organizational innovation. Researches of Gerive (2005), Alberto *et al.*, (2007) and J. *et al.*, (2006) also showed that organizational learning and organizational innovation has a significant relationship with each other (Liao *et al.*, 2008).

MATERIALS AND METHODS

The present study is applied in terms of objectives, in terms of time it is sectional and in terms of implementation it is a survey in which research literature on organizational learning, organizational innovation and firm performance has been developed through scientific literatures. Then the data of three variables have been gathered through questionnaire and have been analyzed by smartpls. Research population consists of all headquarter staff in Islamic Republic of Iran railway company. In this study, due to limited target population (747 people), sample size obtained as 254 by using Cochran formula.

Two indexes of convergent validity and discriminate validity of measurement have been used to confirm the validity. Convergent validity refers to the principle that any structural indicators have a moderate correlation with each other.

Fornel and Larker (1981) criteria for more convergent validity of the mean-variance of output (AVE) is to be more than 5.0. Discriminate validity measured by the comparison of square root of AVE with the correlation between latent variables.

Square root of AVE for each construct should be more reflective of the structural correlation with other constructs in the model. Another test of the discriminate validity is obtained by calculating transverse load. If the load of discriminate validity for each structure is higher than other structures, the discriminate validity will be confirmed (Pepento *et al.*, 2008). The questionnaire used in this study to collect the required data. In present study, pattern-finding algorithms structural equation analysis was used to test the hypotheses.

Research Hypothesis

1. Organizational learning significantly relates to innovation.
2. Organizational learning significantly relates to organization performance.
3. Innovation significantly relates to organization performance.

Table1: Analyzing fitness of structural equation model

Mixed validity	times	Structural and indicator measure
0.87	0.73	Organizational learning
0.86	0.71	innovation
0.82	0.69	Organization performance

According to Chin (1998), R2 is estimated only endogenous variables and represents the variance of the latent endogenous variables, values greater than 0.67 are significant, between 0.67 and 0.33 are average and less than 0.19 is considered to be weak. Also, if a specific model is a combination of endogenous latent variables with only one or two exogenous latent variable, in this case the "average R2" is acceptable. R2 values ranged between 0.39 and 5.0 in the project and according to the model as a combination of endogenous latent variables with only one hidden exogenous variable, so the value of R2 model is also acceptable. GOF index is an indicator to evaluate the fitness of the model to predict the endogenous variables. Values greater than 0.9 for the appropriate model fitness statistics show that the amount for this research is 0.93 which is a fitness model.

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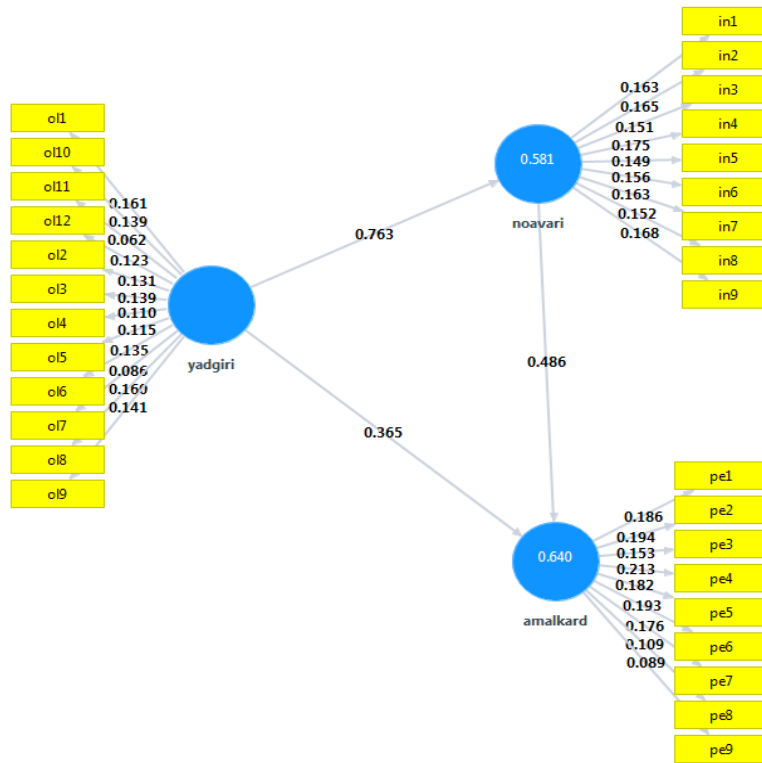


Figure 1: Structural equation model

Table 3: Correlation between research variables

R ²	AVE	Organization performance	innovation	Organizational learning	
-	0.73	0.36	0.76	-	Organizational learning
0.58	0.78	0.48	-		innovation
0.64	0.71	-			Organization performance

Index (AVE) examines to what extent a hidden variable can explain variance parameters (apparent variables) in average. The coefficients for all variables are summarized in the table above. The indicator variable for organizational learning, innovation and corporate performance are 0.73, 0.78 and 0.7, respectively and shows Cronbach's alpha and reliability coefficient. These variables measure external validity of measurement tools. All these values are higher than 7.0 that indicate high reliability and validity of the measurement instrument.

$$\text{Amalkard sazmani} = 0.48 \text{ noavari} + 0.36 \text{ yadgiri sazmani}$$

$$\text{noavari} = 0.76 \text{ yadgiri sazmani}$$

RESULTS AND DISCUSSION

First Hypothesis

Organizational learning significantly relates to innovation. In other words the organizational learning leads to the better performance of the organization in innovation of products and process. Organization managers through improvement of learning level will be able to increase the power at first level and then the completion and the level of creativity and organization innovation. Organizational learning increases the innovative capacity. Innovation occurs in personal and organizational learning. The research of Rjeris and Schon (1978), Alberto *et al.*, (2007) and J. *et al.*, (2006), Liao *et al.*, (2008) have also confirmed this.

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Second Hypothesis

Innovation as a mediator affects the relationship between organizational learning and performance. It can be result that managers of organizations through promoting learning in the organization can improve power of competition and the level of creativity and innovation. Passing the promotion of innovation processes in organizations is passing through organizational learning capability that provides infrastructure necessary for the initiation and implementation of innovation. Each improvement of organizational learning factors includes management commitment, teamwork, systemic thinking, mental models of the customer, individual capabilities and knowledge management to improve the level of innovation in an organization. While organization managers committed themselves to provide open space for new ideas and delegating to staff, they will provide a condition in which organizational learning and innovation will be counted valuable.

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