

Explaining the Relationship between Organizational Structure and Dimensions of Learning Organizations (Case study: Education Organization in Boroojerd County and the Related Departments)

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Abstract

The present survey has been conducted to explain the relationship between organizational structure and dimensions of learning organizations. It was conducted using descriptive-field method. The statistical population included employees of Education Organization in Borujerd County and the related departments. Sample volume was selected through random sampling method and was equal to 140 persons using Morgan table. Validity of the questionnaire was confirmed through content validity by professors and the clear-sighted. Its reliability was measured using pre-test and calculating Cronbach alpha. Pierson correlation coefficient, Friedman test and bi-nominal test using SPSS software were used for data analysis. Results of Pierson correlation coefficient test show there is a significant and negative relationship between organizational structure and fulfillment degree of learning organizations. This relationship is significant about all dimensions of learning organization. Given to results of Friedman test, the most important dimension of learning organizations is the component of team learning based on the viewpoint of employees of the Education Organization. According to results of bi-nominal test, there is only one variable in the statistical population and that is mental models. Also according to results of correlation coefficient matrix of research variables team learning and shared vision have the highest correlation.

Keywords: organizational structure, organizational learning, dimensions of learning organization, Peter Senge model

Introduction

Organizations have to look for adaptation, improvement and innovation permanently due to global competition pressures and increased speed of technological changes (Chen et al, 2010, p.848). Today the most major threat for organizations is that competitors intend to change rules of the game. In this case if an organization acts based on its habitual regulations, its survival would be endangered (Mohammad Esmael et al, 2009, p 105). Large and complex organizations which have been established in previous decades are no longer efficient. Such organizations with traditional structures would be doomed to death like dinosaurs that could not match themselves with the environment (Khalili Araghi, 2004, p 92). Permanent change and adaptation is the most important reaction in facing with such dangers (Mohammad Esmael et al, 2009, p 105).

On the other hand, the current environment is complex and unpredictable (Frankema et al, 2006, p.291) and organizations are always encountered with social developments like globalization, technological advancements and enhanced global competition (Govaerts et al, 2011, p. 35). Some organizations were successful in this environment and some other failed and thus being omitted from the competition arena. Now the proposed question is that what distinguishes successful organizations from unsuccessful organizations. In this regard De Geus (1997) indicated the ability to learn faster than competitors might be the only competitive advantage for organizations (Fisser & Browaey, 2010, p. 58).

Organizational learning is one of the most meaningful characteristics of successful organizations in long-term (Bontis & Serenko, 2009, p. 55) and is a social process (Limerick & et al, 1994, p. 35) which provides opportunities for organizations to be able to repeat their previous success (Trim & Lee, 2007, p. 335). Indeed organizational learning is a way to achieve competitive advantage (Hong, 1999, p. 173) and if an organization intends to learn slower than its environment, it is doomed to death (Aggestam, 2006, p.295). Senge believes that failure in learning would be led to premature death of the organization (Shelton & Darling, 2003, p.353).

In fact intensive competition has been resulted in shorter life cycle of products. Organizations which want to obtain competitive advantage are under more pressure. It could be obtained by those organizations that react towards new conditions of the market and customers' needs faster and always look for creative solutions and permanent improvement of products and processes. Modern organizations should permanently be in a state of adaptation, development and innovation. In this case implementing the principles of learning organization is a vital factor (Martensen & Dahlgaard, 1999, p. 878), because learning organizations could enhance their skills in order to confront with environmental changes (Martensen & Dahlgaard, 1999, p. 878). Given to the above issues, the relationship between organizational structure and dimensions of learning organization in Education Organization in Borujerd County and the related departments is explained in this survey.

Theoretical principles

A) Organizational structure

Organizational structure shows to what extent organizations approve decision-making power, standardize the rules and regulations and integrate members and labor to establish their organization (Chen et al, 2010, p.850). Indeed organizational structure determines tasks, relation paths and work practices of employees (Hunter, 2002, p.7) and is usually classified into three elements including formalization, complexity and centralization (Chen et al, 2010, p.853).

- **Formalization:** it refers standardization of jobs in the organization and directing behavioral limit of employees based on rules and regulations. In organizations with high formalization job descriptions are explained explicitly, there are too many rules and procedures are defined clearly (Nasurdin et al, 2006, pp.118-119).
- **Complexity:** it refers task division across the organization (Stank et al, 1994, p.42) and could be measured through standards such as horizontal separation, vertical separation and geographical dispersion (Moghimi, 2007, p 42).
- **Centralization:** it refers how power is distributed in the organization (Moghimi, 2007, p 43) and shows to what extent decision-making power has been delegated to higher levels of the organizational hierarchy (Lysonski et al, 1995, p. 9).

B) Learning organization

Most clear-sighted believe learning organization theory belongs to Peter Senge (1990) (Dymock & McCarthy, 2006, p. 525). Learning organization according to Senge is an organization in which employees enhance their capabilities permanently to achieve intended outputs (Smith, 2011, p. 7) and thus new thinking models and group thoughts are developed and they constantly learn from each other (Lewis, 2002, p. 282).

Senge published his classic book "the fifth discipline: methods to create learning organization" in 1990 (Cavaleri, 2008, p.474) and describes discipline which are necessary to change organizations into learning organizations (Rifkin & Fulop, 1997, p.135). These five disciplines are personal mastery, mental models, shared vision, team learning and systems thinking (Parding & Abrahamsson, 2010, p. 294).

- **Personal mastery:** it is a discipline regarding "clarifying personal viewpoint of employees, concentrating their energy, developing patience and unbiased and realistic vision" (Akhtar & Ahmad Khan, 2011, p.260). Indeed it is the ability to see the reality as it is (Vargas-Hernández & Noruzi, 2010, p.192) and is among the strategic elements of learning organization processes which constitute central part of the organizational capabilities' development (Som et al, A 2010, p. 118).
- **Mental models:** they reflect mental image of people from the external world and affect their decisions and activities (Prugsamat, 2010, p. 246). Developed mental models are

the basis of "motivation" which create foundation of all educational and learning activities (Bui & Baruch, B 2010, p. 234). In other words, mental models affect individuals' attitude in the organization and determine what people do and what not to do (Morrison, & Rosenthal, 1997, p.125).

- Shared vision: a vision is shared when people have a common image from a desired future along with a mutual commitment in order to achieve it (Garcia-Morales et al, 2006, P. 25). It creates energy and focus for learning and encourages risk and experiment and people who have a shared vision try to fulfill it (Akhtar & Ahmad Khan, 2011, p.261).
- Team learning: it is a process during which capacity of the group members is developed and thus they are harmonized so that the obtained results would be favorable for all (Bui & Baruch, 2010, p. 214). Senge believes that team learning is very important, since teams and not individuals constitute the building block in modern organizations (Nafukho et al, 2009, p. 36). In other words, personal learning depends on team learning (Nafukho et al, 2009, p. 36).
- Systems thinking: (a piece of cloud is compressed, the sky becomes dark and then it is raining). Systems thinking is observing a system completely instead of considering its individual members like perceiving a process that is resulted in raining (Sange, 2004, p.3). Indeed it is a discipline which has holistic vision and makes it possible to view relations. It helps consider variable models more than static "snapshots". Moreover, the fifth discipline includes a set of all previous discipline in a coherent body of theory and action (Akhtar & Ahmad Khan, 2011, p.261). It also contains the ability to consider the environment and perceiving consequences of decisions on other parts of the system (Vargas-Hernández & Noruzi, 2010, p.192). Actually, systems thinking is paying attention to the whole rather than the individual elements (Teare & Dealtry, 1998, p. 49).

Research background

Chen et al (2010) conducted a study entitled "knowledge management and innovation: role of organizational structure and climate" and concluded whatever the organizational structure has less formalization, more non-centralization integration, knowledge management is increased (Chen et al, 2010, p 848).

Prugsamatz (2010) conducted a study entitled "effective factors on organizational learning in non-profit organizations". He concluded that personal motivation for learning, dynamic teams and organizational culture have a considerable impact on creating learning organizations (Prugsamatz, 2010, p 243).

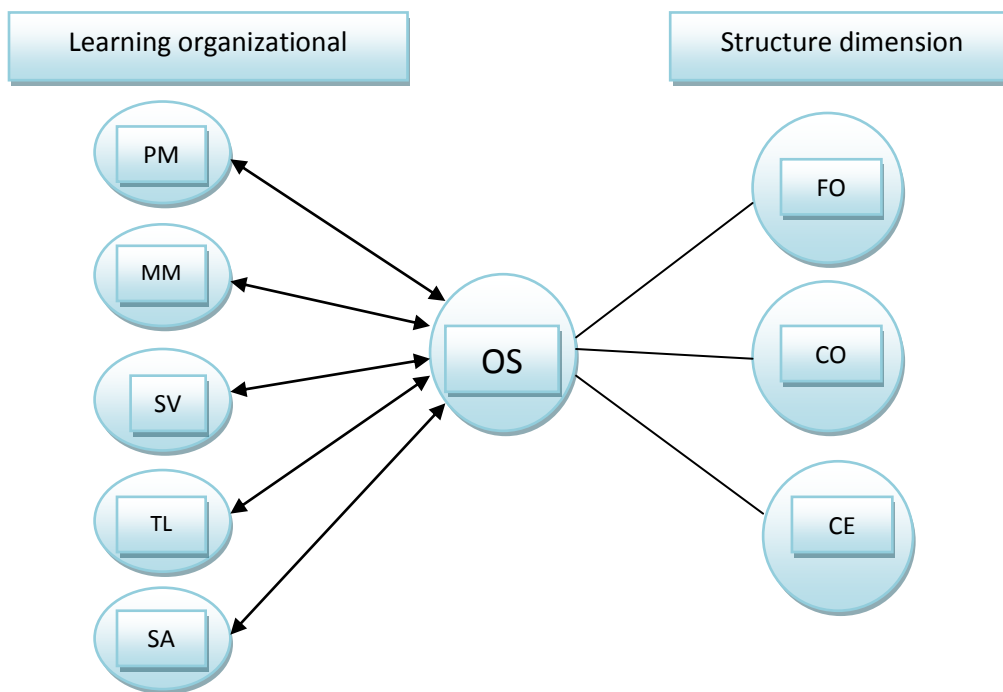
Helmhout (2011) in his study entitled "learning from the fringe": beyond a supranational model" concluded an international structure could enhance learning level (Helmhout, 2011, p.48).

Mohammad Esmaeil et al (2009) conducted a study entitled "studying the relationship between organizational structure of central libraries related to Ministry of Science, Research and Technology in Tehran and their degree of adaptation with characteristics of learning organizations". They concluded that there is a negative and significant relationship among vertical separation, formalization and centralization with organizational learning. Also, there is a direct relationship between professionalism and degree of organizational learning (Mohammad Esmaeil et al, 2009, p 104).

Conceptual framework

Theoretical framework is a conceptual model based on theoretical relations among the factors which have been important regarding the issues under study. The following conceptual model has been studied in this survey to determine the relationship between organizational structure and dimensions of learning organization (Peter Senge's model). It is shown in diagram (1).

Diagram 1- conceptual framework of the survey



In this diagram formalization is shown with FO, complexity with CO, centralization with CE, organizational structure with OS, personal mastery with PM, mental models with MM, shared vision with SV, team learning with TL and systems thinking with SA.

Research purposes

1- Primary purpose: determining the relationship between organizational structure and fulfillment degree of learning organization

2- Secondary purpose: determining the relationship between organizational structure and fulfillment degree of each dimension of learning organization

Research hypotheses

- 1- Primary hypothesis: there is a significant relationship between organizational structure and fulfillment degree of learning organization.
- 2- Secondary hypothesis: there is a significant relationship between organizational structure and fulfillment degree of each dimension of learning organization.

Methodology

Statistical population of this survey included employees of Education Organization equal to 220 persons. Sample volume was selected through random sampling method and was equal to 140 persons using Morgan table. The survey was conducted using descriptive-field method. Closed questionnaire was used to collect data which was designed based on six-option Likert scale in order to measure attitudes (extremely low, low, relatively low, relatively high, high and extremely high). Thus standard questionnaire of organizational structure (24 questions) and researcher self-made questionnaire of learning organization (25 questions) were applied. Face validity and content validity of the questionnaire were reviewed and confirmed by some professors and the clear-sighted. A pre-test was conducted among a sample consisted of 30 persons to confirm its reliability and Cronbach alpha coefficient of organizational structure's questionnaire was equal to 0.841 and that of learning organization was equal to 0.897 at an acceptable level. Pierson correlation coefficient, Friedman and bi-nominal tests using SPSS software were applied for testing of hypotheses.

Data analysis

A) Results obtained by Pierson correlation coefficient test

Note: wherever significance level is less than 0.05, null hypothesis is rejected at confidence level 0.95 (rejecting the null hypothesis means there is a significant relationship between organizational structure and fulfillment degree of learning organization). If there are not sufficient evidences to reject null hypothesis, it means there is no significant relationship.

Primary hypothesis: there is a significant relationship between organizational structure and fulfillment degree of learning organization.

Table 1- correlation between organizational structure and fulfillment degree of learning organization

	Fulfillment degree of learning organization	Standard deviation
Organizational structure	-0.592	Correlation
	0.000	Significance level

As results of table 6 show, correlation coefficient between two variables of organizational structure and fulfillment degree of learning organization is equal to -0.592. Significance level is equal to 0.000 given to the numerical value and there is a relationship between the two variables, because $sig < \alpha$. Thus, null hypothesis (H0) is rejected and H1 is accepted. Since correlation coefficient between the two variables in this hypothesis is negative this relationship is negative (reversed).

Secondary hypothesis: there is a significant relationship between organizational structure and fulfillment degree of each dimension of learning organization

Table 2- correlation between organizational structure and fulfillment degree of each dimension of learning organization

		SA	TL	SV	MM	PM
OS	Pierson correlation	-0.372	-0.450	-0.391	-0.453	-0.401
	Significance level	0.000	0.000	0.000	0.000	0.000
	H0	Rejected	Rejected	Rejected	Rejected	Rejected
	Significant relationship	There is a significant relationship	There is a significant relationship	There is a significant relationship	There is a significant relationship	There is a significant relationship

As results of table 7 show, correlation coefficient between two variables of organizational structure and each dimension of learning organization is significant and negative since correlation coefficient between the two variables in this hypothesis is negative.

B) Results of Friedman test

Friedman test is used to rank a number of dependent variables. Results of Friedman test regarding the dependent variable (learning organization) are illustrated in table 3.

Table 3- results of Friedman test

Dimensions	Average rank
TL	4.68
SA	4.51
PM	4.40
SV	4.24
MM	2.85

C) Results of bi-nominal test

Bi-nominal test is used to study existence or nonexistence of learning organization dimensions and components of organizational structure. Results of this test are shown in table 4.

Table 4- results of bi-nominal test

Index	Observed probability	Test ratio	Significance level	Error level	Conclusion
FO	0.30	0.50	0.000	0.05	Standardization of jobs in the organization and directing employees' behavioral limit based on rules and procedures are at a low level.
CO	0.30	0.50	0.000	0.05	Tasks division is at a low level across the organization.
CE	0.51	0.50	0.800	0.05	Decision-making power is transferred from high levels of the organizational hierarchy to lower levels.
PM	0.48	0.50	0.673	0.05	Employees do not have personal commitment for learning.
MM	0.74	0.50	0.000	0.05	Employees don't have bias with regard to their prior learning and accept criticism. Also, they believe always there is a better way to perform tasks.
SV	0.58	0.50	0.076	0.05	There is no common perspective among employees with regard to future of the organization.
TL	0.51	0.50	0.800	0.05	Team working is not exploited effectively.
SA	0.52	0.50	0.673	0.05	Employees do not have the ability to consider the environment and perceive consequences of decisions on other parts of the system.

D) Correlation coefficient matrix of research variables

Table 5 Correlation coefficient matrix of Pearson research variables

OS	1					
PM	-0/401	1				
MM	-0/453	0/457	1			
SV	-0/391	0/468	0/312	1		
TL	-0/450	0/356	0/452	0/594	1	
SA	-0/372	0/298	0/447	0/586	0/541	1
	OS	PM	MM	SV	TL	SA

All of the above coefficients are significant at error level 0.05.

Conclusion and suggestions

Objective of the present survey was to explain the relationship between organizational structure and fulfillment degree of learning organization in Borujerd County and the related departments. Results of Pierson correlation coefficient test reveal there is a negative and significant relationship between organizational structure and fulfillment degree of learning organization. This relationship is significant too about each dimension of learning organization. According to Friedman test team learning is the most important dimension of learning organization in viewpoint of employees of Education Organization. It means that more investment should be conducted in this component by authorities of this organization. Results of bi-nominal test show mental models variable exists in the statistical population, i.e. employees don't have bias with regard to their prior learning and accept criticism. Also, they believe always there is a better way to perform tasks. Given to results of correlation coefficient matrix of research variables, team learning and shared vision have the highest correlation level. Given that the relationship between organizational structure and fulfillment degree of learning organization is negative, the following cases are suggested in order to decrease formalization, centralization and complexity of Education Organization and the related departments and realize learning organization:

- Compiled job descriptions in the organization should be reduced.
- Where there is job description, controls related to adapting employees' performance with job descriptions should be granted to employees.
- Conditions should be established under which supervisors and middle managers act independently of rules and regulations in decision-making.
- Number of job titles should be reduced.
- It is recommended to hire employees who have specialized degree and encourage the

existing employees to pass specialized educational courses.

- Levels of organizational hierarchy should be decreased.
- Supervisors should have the necessary authorization in determining how to perform exceptional and unprecedented tasks in their unit.
- Supervisors should have the necessary authorization to implement new projects and plans.
- Supervisors should have the necessary authorization to purchase materials and equipments for their unit.
- Supervisors should have the necessary authorization for granting financial rewards to employees in their unit.
- Supervisors should have the necessary authorization to determine budget of their unit.
- Controlling the adopted decisions must be granted to supervisors of units by senior managers.

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