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Presenting Structural Equation Model for Measuring Organizational Learning Capability

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Abstract

From a strategic viewpoint, the measurement scale identifies the elements that form learning capability, highlighting its complex and multidimensional nature. The evidence that the results provide regarding the scale's validity suggests that we may use this tool in future research work requiring a measurement of learning capability. Likewise, the scale provides information that could be of use to those managers wishing to improve learning capability in their firms. It is presented a structural equation model for measuring organizational learning capability and we can classify them into 5 dimensions: Managerial commitment and empowerment, experimentation, Risk taking, Openness and interaction with external environment, Integration and knowledge transfer.

Keywords: Measuremen, Learning capability, Organization

1. Introduction

The analysis of organizational learning has become an increasingly important study area over recent years. It is one of the reasons for growing importance of learning in organizational concepts is fast changing environments, the need for innovation and human resource in the organization [1, 5]. It can be said that the most important competitive capability of an organization is learning potency, for the most important challenge of management of organizations can be learning potency of its organizations. Increasing the importance of organizational learning led various researchers to analyze it from different perspectives. Various studies indicate a positive effect of organizational learning on many organizational concepts (technology, job satisfaction, performance, quality, innovation management, innovation and ...). One of the critical factors in firm performance and survival of the company's competitive environment is innovation [2, 6] which, in view of many researchers (e.g. studies [2, 3, 4, 8] and [1]). Organizational learning increases the potential for innovation in the organization. Insofar McKee (1992) has considered product innovation equivalent to organizational learning process and has claimed that it develops the guiding of organization toward the learning performance and innovation effect [5, 7].

Although many researchers have acknowledged the importance of organizational learning capability in increasing innovation, but the practical research that can examine this relationship does not exist. In this research, we want to investigate whether the significant relationship between innovation and organizational learning and particularly innovation product exists or not in addition to provide a model for measuring organizational learning.

2. Presenting Structural equation model for measuring organizational learning capability

One of the traditional ways of measuring learning has been to use so-called learning curves and experience curves. However, these curves are ''incomplete measuring tools'' because they concentrate exclusively on learning by

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doing and measure learning in terms of the results obtained, in search of short-term efficiency. Besides studying experience curves, learning has also been measured by taking into account other variables, such as number of patents or R & D expenditure. The common characteristic shared by all these techniques is that they focused on process outcomes, rather than the actual learning processes, but organizational learning is a complex multidimensional construct, encompassing multiple sub-processes ([9, 10,11,12,13]).

Determining criterion for measuring organizational learning capability is important, but authors should use the experiences of others to provide a model for measuring and it is impossible to present a model regardless of the concepts and results of the research.
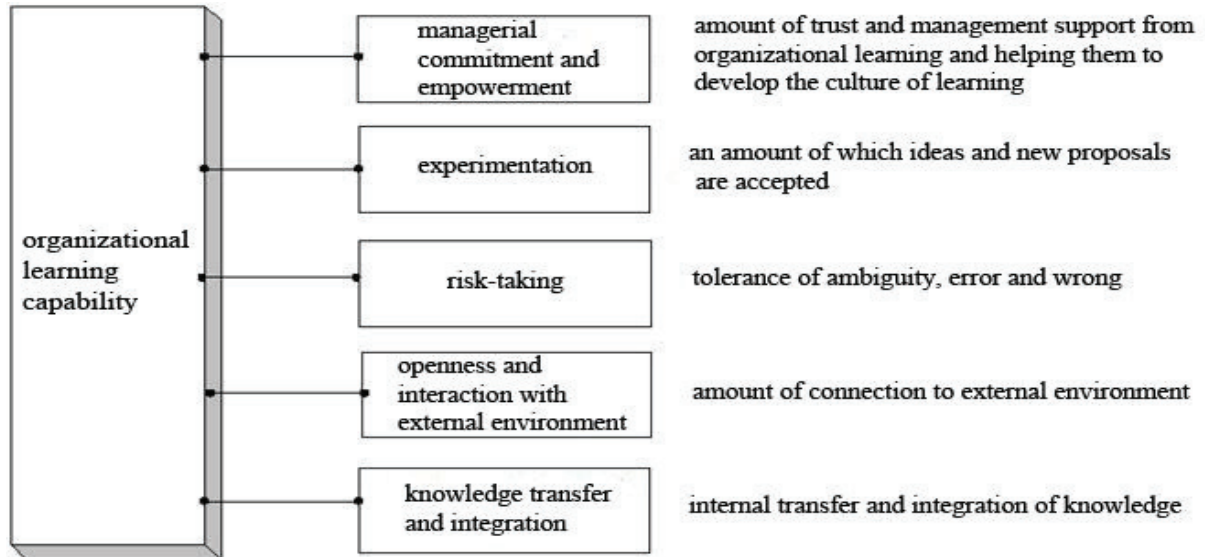

Figure 1-2: Provided model for measuring the organizational learning capability

Then, according to the models presented so far, especially the models provided by Chiva and Gomez, we provided a model with 5 dimension; experimentation, managerial commitment and empowerment, risk taking, open space and interact with external environment and knowledge transfer and integration. We have used the 23 items for assessing these dimensions (Table 1-2 and Figure 1-2).

3. Managerial commitment and empowerment

Role of management in creating an organization with culture of learning is clear because no specificity develops without the support of senior managers in the development organization. Most authors directly or indirectly, have mentioned to the importance of leadership in the development of culture of learning by management behaviours such as learning through feedback, criticism, being flexible, accepting mistakes and encouraging employees to make decisions and accept risks [3, 14, 18].

Edmondson, Gino, and Garvin have introduced a template for the learning organization which includes three sections and one of these sections is leadership for learning.

If management understands the vital role of learning in the survival and development of organizations, then it creates an ideal environment for gaining, creating and transferring knowledge and it will try to encourage and ready the staff to do this. Managers should develop capabilities of employees in learning, giving them authority in decision making, supporting new ideas, staff training; encourage them to risk taking and problem-solving. Considering this, we study the empowerment and commitment of management as a factor facilitating organizational learning. This dimension includes flexibility of managers, lack of resistance toward change; the importance of employees 'learning and their participation in decision-making.

dimensions	abbreviations	questions	authors
Managerial commitment and empowerment	*COM*	1. Do managers often involve the staffs on crucial decisions?	Gomez – Aqdasi – Goh Richards
		2. Do the views of staffs affect the company policies?	Chiva
		3. Do people feel that their opinion is important to company decisions?	Chiva
		4. The staff learning is considered as investment or cost.	Gomez - Aqdasi
		5. The managers are exceptionable.	Goh and Richards - Sobhani
		6. The managers resist on changes and scare from accepting new ideas.	Sobhani
		7. Do people encourage and support when they make new ideas?	chiva
		8. The creative ideas of company often receive rewards from management.	Goh and Richards
		9. The ideas which attain through external resources regard as useful instrument in learning.	Gomez and Aqdasi
experimentation	*EXP*	10. According to my experience, new members are encouraged to ask question about how do the matters.	Goh and Richards
		11. Do the employees accept the risk and have courage to risk doing?	Chiva
Risk-taking	*RISK*	12. The organization is encouraging people to take risk.	Chiva
		13. Company managers do not bear the consequences of accepting risk.	
		14. Are there any processes and systems to gather information from outside of organizations such as factories and other customers?	Chiva
		15. Are the employees encouraged to interact with the external environment such as other factories, laboratories, corporations, customers?	Chiva
Openness and interaction with external environment	*ENV*	16.In my opinion, the company is unaware of strategy of their competitors, developments and techniques.	Templeton
		17. One of the duties of employees of this company is tocollect and report information about what happens outside of the company.	Chiva
		18. I think the company will be coordinated slowly with technology developments.	Templeton

22. New business process that may be useful for the organization, generally shares among all employees.	19. Are the matters done as teamwork in this company?	Gomez - Aqdasi
	20.Management encourages staff to communicate and interact with each other.	Chiva - Gomez
SHARE	21. Employees are allowed to talk among themselves about ideas, programs and new activities that may be useful to the organization.	Gomez – Aqdasi – Goh and Richards
	23. This organization has tools (database, files and organizational methods and ...) that shows what educations already have been given to staff.	Gomez

Table 1-2

5. Risk taking

Risk taking means the amount of tolerance of ambiguity, error and wrong. In 1981, Hedberg introduced a series of activities to facilitate organizational learning, which emphasized the design of the environment so that take risk and accept mistakes. However, it is clear that one of the conditions of risk acceptance is the probability of happening error.

Edmonson, Garvin and Chino, introduced the degree that people are prepared to take risks an important factor in creating a learning culture.

6. Openness and interaction with external environment

Our unit of analysis is generative or double-loop learning, which requires a climate of openness that welcomes the arrival of new ideas and points of view, both internal and external, allowing individual knowledge to be constantly renewed, widened, and improved. Openness in organization led the new ideas which are presented inside or outside of organization have checked.

Also in this type of learning, knowledge continuously updated and constantly improve their knowledge of people are ([6] and [7]) as open space in new ideas that the organization makes the organization or outside organizations is presented in organization be tested.

Openness and interaction with external environment provide acquaintance to new ideas, learning from other's experiences and modelling competitors and other organizations. Importance of openness and interact with the environment in organizational learning is to the degree that most researchers (such as Galer and Vander Hichden, McKee, Norman, Sinkula, Templeton, Chiva, Gomez and Nevis) have mentioned it as one of the important parameters in the organizational learning capability. External environment implies factors which are not under the control of the organization, but indirectly have impact on the organization. It includes other companies, like competitors, economic systems, social systems, financial systems and legal systems. Environmental characteristics have played an important role in learning and organizations must have interaction with external environment if they tend to adapt to environmental changes in time.

7. Integration and knowledge transfer

Nemeth has defined learning as effective transfer of knowledge from professionals to others [48]. Many researchers have introduced the organization's ability to transfer knowledge and information, as one of the important factors of OLC ([1, 15, 4, 5, 6, 16, 17]).

Knowledge transfer implies the internal spreading of knowledge acquired at an individual level mainly through conversations and interaction among individuals([1] and [3]). With regard to dialogue and debate, work teams and personnel meetings can be ideal forums in which to openly share ideas. The main role of work teams in developing

organizational learning is frequently underlined in the literature. In addition to scholars such Garvin, Gomez, and Abokhdra and Ravabde, Hesiofen Lynn, Vic and Leon, Goh who believe that transferring and sharing of knowledge and information is one of dimensions of organizational learning capability, other researchers also have pointed to it somehow.

In fact, connection of member of organization with each other may lead to transfer problems and opportunities of organization throughout it. Transfer, collection and integration of knowledge and experiences of people create an organized set of knowledge that will remain in the organization and will be used for others.

Reference

1. Alegre, J., Lapiedra, R., Chiva, R., 2005, A literature-based innovation output analysis: implications for innovation capacity" International Journal of Innovation Management 9 (4), 385–399.

2.Alegre, J., Lapiedra, R., Chiva, R., 2006, A measurement scale for product innovation performance, European Journal of Innovation Management, 9 (4), 333–346.

3.Alegre. J, Chiva. R, 2008, Assessing the impact of organizational learning capability on product innovation performance: An empirical test , ELSEVIER , 28

4.Argyris, C. and Schon, D. (1996), Organizational Learning II: Theory, Method, and Practice, Addison-Wesley, Reading, MA.

5.Bapuji, H. and Crossan, M., 2004, "From raising questions to providing answers: reviewing organizational learning research", Management Learning, Vol. 35 No. 4, pp. 397-417.

6.Bueno, E., Ordonez, P., 2004, Innovation and learning in the knowledge based economy: challenges for the firm, International Journal of Technology Management 27 (6/7), 531–533.

7.Chiva,R. and Alegre.j, 2007, Measuring organizational learning capability among the workforce, International Journal of Manpower, Vol. 28 No. 3/4,pp. 224-242.

8.H. Tohidi, 'Modelling of Business Services in Service Oriented Enterprises' Procedia-Computer Science Journal, Elsevier, 2011, USA.

9.H. Tohidi, 'The Role of Risk Management in IT systems of organizations' Procedia-Computer Science Journal, Elsevier, 2011, USA.

10.H. Tohidi, 'Human Resources Management main role in Information Technology project management' Procedia-Computer Science Journal, Elsevier, 2011, USA.

11.H. Tohidi, Mohammad Mehdi Jabbari 'The main requirements to implement an electronic city' Procedia-Computer Science Journal, Elsevier, 2011, USA.

12.H. Tohidi, 'Review the benefits of using Value Engineering in Information Technology Project Management' Procedia-Computer Science Journal, Elsevier, 2011, USA.

13.H. Tohidi, 'Teamwork Productivity & Effectiveness in an Organization base on Rewards, Leadership, Training, Goals, Wage, Size, Motivation, Measurement and Information Technolog' Procedia-Computer Science Journal, Elsevier, 2011, USA.

14.H. Tohidi, 'E-government and its different dimensions: Iran' Procedia-Computer Science Journal, Elsevier, 2011, USA.

15.H. Tohidi, Aslan Azimi Afshar, Aida Jafari 'Using Balanced Scored Card in   Educational Organizations' Procedia - Social and Behavioral Sciences, Elsevier, May 2010, USA.

16.H. Tohidi, Aslan Azimi Afshar, Aida Jafari 'Strategic planning in Iranian educational organizations' Procedia - Social and Behavioral Sciences, Elsevier, May 2010, USA.

17.H. Tohidi, M. J. Tarokh, 'Productivity Outcomes of Teamwork As an Effect of Information Technology & Team Size, International Journal of Production Economics(ISI), Elsevier, 2006, In Press, Netherlands.

18.H. Tohidi, M. J. Tarokh, 'Modeling and Analysis of Productivity Teamwork Based on Information Technology', International Journal of Production Research (ISI), Taylor and Francis, 2006, In Press, England.