

The Study on the Impact of Knowledge Inertia on Organization

Sajjad Shalika, Nina Lahoutpour and Azizah Bt Abdul Rahman

Faculty of Computer Science & Information System, University Technology Malaysia, 81310 Johor
Bharu, Johor, Malaysia

Management department, Azad University of Arak, Arak, 652781, Iran

Faculty of Computer Science & Information System, University Technology Malaysia, 81310 Johor
Bharu, Johor, Malaysia

Abstract: This study reviews the impact of knowledge inertia on organizations by considering relationship between knowledge inertia and organizational learning and innovation in Wagon Pars Company in Iran. It formulates some hypotheses from the literature review. These hypotheses were tested using structural equations modeling with data collected from 200 respondents. Therefore, in this study, the researcher intended to examine the hypotheses and found the relationship between variables of knowledge inertia and organizational learning as well as the relationship between organizational learning and organizational innovation. In addition, it examined the relationship between knowledge inertia and organizational innovation to find out the impact of knowledge inertia on organizations. Findings show that, from 12 sub hypotheses, 8 of them are approved and the rest are disapproved. In conclusion, it has been proved from the results that knowledge inertia is in conflict with organizational learning and innovation. Furthermore, it clearly seems that organizational learning has positive relationship with organizational innovation.

Key words: Knowledge Stagnation, Learning Stagnation, Organizational Learning, Organizational Innovation.

INTRODUCTION

Knowledge is considered as an invaluable and effective resource for organizations and individuals. Thus, acquiring knowledge and utilizing it for organizational activities are necessary. However, individuals usually make use of their experience and prior knowledge when they encounter problems, and solve similar problems in the same solution. This common routine problem-solving is called "Knowledge Inertia". Mostly, such methods are used in order to save time, effort and converted to avoid risks. Sources dead old science and experience to guide them routines and solutions people used to apply, while encountering a problem. Such predictable behavior management "could jeopardize the position of an organization within a competitive environment. In the modern economy, knowledge is the main source of economic and industrial development and other traditional factors of production such as land, labor and capital are also in another way (Drucker,1994,93). Drucker considers knowledge as the only competitive advantage of an organization. So to deal with the existing challenges, organizations should be seeking ways to augment research and knowledge development, shape their efficient management and find an effective way to exploit it.

Usually, normal ways to solve problems are taken to save time, effort and to avoid risk. Dead academic resources and also previous old experiences result in the same old solutions. These managerial predictive behaviors may endanger an organization which is in a competitive environment. "Inertia" not only has a negative impact on the exploitation of knowledge, but also may divulge commercial secrets and strategies that an organization has. In other words: organizations that have inertia in their ways of thinking and in their policy, may fail. This indicates the significance of innovation in knowledge management and that the organizations should try to avoid inertia.

This paper presents the relationship between knowledge inertia and organizational learning and innovation which are done in Wagon Pars Company. It reviews some literature then proposes the hypotheses and later proves them.

Literature Review:

Knowledge Management:

Knowledge management, mainly, is an activity that focuses on strategies and solutions for managing human thinking CAPS. Organizations apply the optimum and effective methods to achieve the existing knowledge and include it within goods and services in order to foster basic merits in competitive environment.

Technologies and social systems within knowledge management have the same value. Changes and conversion of data into useful information is facilitated by information technology (IT). However, it is not a suitable equivalence for converting information into knowledge. Changing information into knowledge is why we believe that knowledge management is done better through the use of knowledge and benefit from social attitudes. The idea behind these optimization systems lies in social-technical attitudes (Shalika and Nikou, 2011).

Although there are various definitions about knowledge management, we should note that how individuals learn knowledge in organizations, how they perform as they learned and how they share that with the others.

Strategies of Knowledge Management:

According to the distinction between explicit and tacit knowledge, two different strategies for knowledge management are suggested.

Strategies of knowledge management are based on an implicit and an explicit approach. Hansen et al (1999) believes that at least, there are two strategies for knowledge management: codification strategy (knowledge of explicit – orientation) and personalization strategy (knowledge of implicit –orientation).

Table 1: Categorization of Organizational Knowledge.

Organization knows what it has not learned. Aware organization	Organization knows what it has learned. Aware organization
Organization does not know what it has not learned. Unaware organization	Organization does not know what it has learned. Unaware organization

Knowledge Inertia:

According to Inertia law in Physics, objects will be static or move in a stable line unless they are forced to move. Physical forces cause the movement of an object and it will remain stable unless a force seizes the movement or change the direction of the object. Human beings can trace the object movements by prediction and have access to it. This fact reveals that perception and cognition of human beings have Inertia or Static mode (Hofsten, C. V., Vishton, P. S., Feng, Q., & Rosander, K. 1998 & Kavcic,V., Krar, F.J.,& Doty, R.W. 1999, 199-203) which Shalika and Nikou (2011) also called it knowledge stagnation.

Inertia approach presents some points:

- 1- Prediction is based upon the fact that objects should have determined path in order to trace them as they are in inertia and have access to them.
- 2- Change in direction requires some forces. i.e. change in inertia occurs by an external factor.
- 3- Change is not spontaneous rather it happens by an external factor.

Individuals and organizations can solve difficulties in high levels by previous knowledge and experience and generalization of them into new conditions. Using past experience for solving new problems reveals the fact that shows that similar phenomenon remain to their stable positions until new forces change those stable positions. Inertia in knowledge is resulted from routine or common methods for solving problems and following past knowledge and experience that may strengthen or weaken abilities of organization in solving problems.

In strong competitive environment, despite the static mode, whatever you think or do is predictable or accessible by the others and this issue may squander organization's energy and lead to its failure. Nonaka-believed that the only privilege of the steadiness of an organization as a whole is in creating new knowledge and disseminate it in different parts of the organization and apply its products, processes and systems.

Learning Inertia:

When individuals feel that by applying past experience and knowledge, there is no need to acquire new knowledge, thereby, they face inertia in learning and teaching stages. In fact, learning inertia is the opposite of organizational learning.

Experience Inertia:

By experience inertia we mean that an organization has some problems in its areas of activity in where experience is very limited and consequently they are not able to overcome the obstacles. Experience is considered as one of the learning sources, which about 70% of learning is got through that. Learning originates from our reactions to different situations in our everyday life. Due to the fact that our responses to different phenomenon are different, so does our learning. Human beings in the case of learning through experience present their priorities and personal tastes as they act in their other behavioral attributes. Most organizations have no time to learn new skills from their own experience (Shalika and Nikou, 2011).

Organizational Learning:

In this ever-changing world, learning process has also changed. Trade and work world is not stable and everything that used to work effectively in the past, may not work in the future. So the organizations need persons who are eager to learn new habits by learning new skills.

Such organizations are learned organizations that create opportunities for accountabilities, gain experience, learn skills and get satisfied with that. (Handy , 1990).

Commitment to Learning:

Human beings need to learn new things every day in order to improve their mental and physical health and ameliorate their growth by the help of learning which is an internal trend. We learn from all past experience. All in all, an individual's commitment to learning and also his/her ability to learn is vital for an organization. Table 2 shows the way of creating commitment to learning in employees.

Table 2- Way of Creating Commitment to Learning in Employees

Way of Creating Commitment to Learning in Employees		
Asking the younger employee to train his/her own experience to the others	Finding innovative ways for linking useful academic learning issues to work experience	Helping to find more ways in order to learn about needed issues
Emphasizing on learning value in human life	Encouragement for finding learning ways and gaining new experience	Helping to think about future goals and the ways to achieve them

Shared Vision:

Shared vision is the discovery of common images about future, which strengthens real commitment in the members of the organization. Vision, points to a clear image and in some cases abstract topics in future that explain why we need to work hard to create such a vision.

Open-mindedness:

Open-mindedness is an analytical method for phenomenon and a way to escape from the enchanted perceptions. The main idea of "Open-mindedness" by Anthony Rothman who is a modernism thinker- is: "experiences based on wisdom ". Organizations need free vision, free expression and self-activation in order to convert implicit knowledge of the employees to formal knowledge, share the information and spread them within the employees. Such elements get managers prepared for methodology and knowledge management (Dovenport, 1997, 45).

Organizational Innovation:

According to recent negotiations and discussions about organizational innovation, producing new products depends notably on research and development issues. (Kuratko, & Hodgetts, 2004, 172-174).

Administrative Innovation:

Administrative innovation occurs within the administrative processes and has influence on social systems in organizations, which include rules, trends, instructions and communications.

Technical Innovation:

Technical innovation entails importing raw materials or equipments from other industrial fields in order to produce new products, which are made radically different from developing the usage of the products or new formulation. For, by combination of several technologies, a completely different product will be presented.

The Connection Between the Knowledge Inertia and Organizational Learning:

Adams and et al consider the knowledge inertia as an impediment that hinders the organizational learning capacities in new developing market. Moreover, the knowledge inertia may impede the individual learning ability, which has influence on organizational learning.

The Connection Between the Knowledge Inertia and Organizational Innovation:

A successful innovation is a knowledge-based one. Therefore, Liao who is the first one that has done research in the area of knowledge inertia- believes that whenever knowledge becomes static in an organization, it has negative effects on organizational innovation and seizes innovation. Regarding the organizations' need to innovation, knowledge management has been as important as innovation management.

The Connection Between Organizational Learning and Organizational Innovation:

Argyris and Schon - believe that organizational learning augments the innovation ability in an organization. Stata considers innovation as a result of individual and organizational learning and the only permanent competitive privilege factor in a knowledge-based industry.

Moreover, Greve explains how organizations can learn through other organizations' innovations. To achieve this, he presents an inter-organization learning competition that makes it possible to investigate the impacts of the source organization's features and also the existing relations between them. (Liao, 2007-2008).

Research Concept Model:

Analytical model of research is divided into three groups which each group consists subgroups for evaluation. Besides, we study the interdependence of the sub-division variables or index of model to determine the relationships between the key variables.

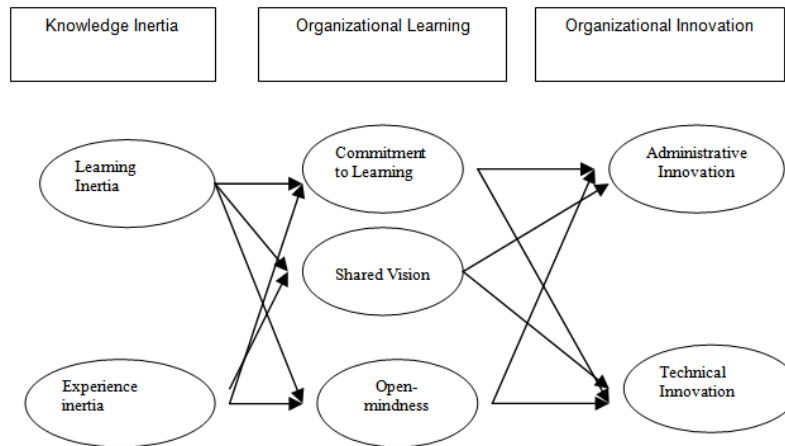


Fig. 1: Sh. Liao *et al.* / Technovation.

Significance of the Study:

Since knowledge is considered as the most important asset of organizations these days, and since it creates the greatest competitive privilege, it is necessary to promote the organizational knowledge by the use of learning and innovation regarding the frequent environmental changes, and avoid using the archaic knowledge to solve new problems.

Thereby, recognition of weak and strength points in the organization and extending this to other private and governmental organizations is very important.

Hypothesis of Research:

- (i) First Main Hypothesis: knowledge inertia has negative connection to organizational learning.
 - a) Sub hypothesis: There is a connection between the learning inertia and learning commitment.
 - b) Sub hypothesis: There is a connection between the experience inertia and learning commitment.
 - c) Sub hypothesis: There is a connection between the experience inertia and shared vision.
 - d) Sub hypothesis: There is a connection between the learning inertia and shared vision.
 - e) Sub hypothesis: There is a connection between the learning inertia and Open-mindness.
 - f) Sub hypothesis: There is a connection between the experience inertia and Open-mindness.
- (ii) Second Main Hypothesis: organizational learning has positive relation with organizational innovation.
 - g) Sub hypothesis: There is a relation between learning commitment and administrative innovation.
 - h) Sub hypothesis: There is a relation between shared vision and administrative innovation.
 - i) Sub hypothesis: There is a relation between Open-mindness and administrative innovation.
 - j) Sub hypothesis: There is a relation between learning commitment and technovation.
 - k) Sub hypothesis: There is a relation between shared vision and technovation.
 - l) Sub hypothesis: There is a relation between Open-mindness and technovation.
- (iii) Third main hypothesis: knowledge inertia has negative relation with organizational innovation.

Research Methodology:

It is necessary to determine statistical population in any research, for, researcher should know the area of study in order to collect data and analyze them. In this research, the statistical population contains 200 managers and experts from Wagon Pars Company in Rail Industry.

Needed data that are all obtained from statistical population, can be collected by data collection methods. We can get the answers to the hypothesis above by analyzing and processing the data. The most usual method for collecting data in field research is making use of standard questionnaire.

Therefore, the collecting methods of this research are questionnaires, which are the result of using various literatures. This questionnaire has 42 items. All questions are designed based on five options scale suggested by Likert and the value range from 1 to 5 is determined. (I extremely agree=5, I agree= 4, I do not know = 3, I disagree = 2, I extremely disagree =1)

The value of Cronbach's alpha is related to the questions in the questionnaire and is a general α for collecting method, which is easily calculated by S.P.S.S. software.

In order to evaluate, the researcher distributes 30 confirmed questionnaires among 30 persons from the sample group and then after collecting them the value of Cronbach's alpha is calculated. Cronbach's alpha for all the items in the questionnaire is about 899%; this reveals that the research method is valid.

Table 3: Cronbach result.

Cronbach α	Number of Items
899%	42

In this research, we used statistical techniques of structural functions. At first we designed a model by Lisrel software based on the collected data, then we calculate those functions by implementation of Perlis program and matrix covariance of equations and reserve index. In calculation model, we estimated the relationships between variables. In fact, by variable t, we calculated all coefficients by various regressions. Finally, we calculate all figures by beta-test based on Lisrel structural equations. Moreover, we evaluate desired model from derivation by deserve index with the automatic use of Lisrel software and Khai test. Of course, we use Khai test whenever the number of the samples is between the ranges of 75 to 200 samples. When a model is exactly determined, estimated and tested, we have some alternatives for evaluating of various indexes which are as following:

The values of Khai test are about 259.25 which confirm the validity of the model in the statistical population; other indexes are as followed:

RMSEA=0.058, NNFI=0.87, NFI=0.75, AGFI=0.76, GFI=0.91

The results are shown as table 4.

Table 4: The results of assumed hypotheses.

Assumptions	Coefficient of Path	Value of t	Approve or Disapprove of Assumption
Sub Hypothesis a	$\gamma_{11}= .434$	3.21	Approve
Sub Hypothesis b	$\gamma_{12}= .352$	1.97	Approve
Sub Hypothesis c	$\gamma_{13}=1.20$.49	Disapprove
Sub Hypothesis d	$\gamma_{21}=1.051$	6.79	Approve
Sub Hypothesis e	$\gamma_{22}= .761$	4.31	Approve
Sub Hypothesis f	$\gamma_{23}= .370$	1.78	Disapprove
Sub Hypothesis g	$\beta_{11}= -.519$	-2.75	Approve
Sub Hypothesis h	$\beta_{12}= .675$	2.49	Approve
Sub Hypothesis i	$\beta_{21}= .522$	1.97	Approve
Sub Hypothesis j	$\beta_{22}= -.439$	-.04	Disapprove
Sub Hypothesis k	$\beta_{31}= .867$	3.38	Approve
Sub Hypothesis l	$\beta_{32}= .385$.13	Disapprove

Conclusion and Discussion:

In examining research hypotheses regarding the results of collecting and analyzing information, the outcomes of research are as follows:

(i) First Main Hypothesis: knowledge inertia has negative connection to organizational learning.

To prove the first original hypothesis, subsidiary assumptions or assumptions used in particular cases are used. In this study, based on the results of questionnaires distributed in the statistical samples, four subsidiary hypotheses a, b, d and e were approved and the other two which are c and f were rejected. The results are as follows:

- In fact the depression resulted from learning led to more staves commitment to learning.
- Lack of new experience among directors, managers and supervisors led to greater commitment and need for learning. In fact, the result of this theory is similar to what has been achieved in Korea. It means the less the experience is, the higher the need to commitment and learning will be.
- The third hypothesis of the researcher is not confirmed, this implies that depression and lack of experience does not share shared vision and viewpoint with directors, managers and supervisors.

- d) Inertia in learning within the individuals has created vision and common view point to solve this problem.
- e) Depression resulted from lack of learning, has led the individuals to enlightened opinions in order to resolve this inertia.
- f) The sixth hypothesis of the researcher is not confirmed; As a result, depression and lack of experience in individuals does not create any enlightenment. In fact, the more the experience are, the more enlightened are the individuals.

(ii) Second Main Hypothesis: organizational learning has positive relation with organizational innovation.

In order to study the second main hypothesis, the six sub-assumptions described below should be studied: Within these sub-assumptions in table above, number g, h, i and k are confirmed and the other sub-assumptions: j and l were rejected. Thus, according to the assumptions above, the results are as follows:

- g) The higher the commitment to learning is within the individuals (directors, managers and supervisors), the more administrative innovations occur.
- h) Creating more common view points within the individuals leads to administrative innovations.
- i) Enlightenment leads to administrative innovations.
- j) The tenth hypothesis of the researcher is not confirmed. In this case, there is no relationship between learning commitment and technical innovation.
- k) Whenever there is more shared vision between the individuals and they have similar view points, it will have positive impacts on enhancing technical innovation.
- l) The twelfth hypothesis of the researcher is not confirmed. As a result, enlightenment does not lead to enhancing technical innovation.

(iii) Third main hypothesis: knowledge inertia has negative relation with organizational innovation.

Knowledge inertia impact on organizational innovation is identified through organizational learning. After analyzing the third research hypotheses and considering the previous cases, the questionnaires and the necessity of the establishment of an up to date new knowledge, this assumption is approved.

Considering these assumptions, surveys and literature of the research, recommendations are given as follows:

1. Establishing commitment for staves' learning through making new opportunities in the field offered.
2. Increasing the capacity for gaining new experiences through learning more about the new rail industry.
3. Establishing a shared vision among staves with regard to the ideals and goals of the organization through recognizing their common characteristics.
4. The fact that the individuals should welcome innovation and flexibility in administrative structure of the organization should be taught to the individuals.
5. Breaking the old traditional structures of thought in people and explaining the necessity of changes in administrative structure for establishing administrative innovation.

In conclusion, it has been proved from the results that knowledge inertia is in conflict with organizational learning and innovation. Furthermore, it clearly seems that organisational learning has positive relationship with organizational innovation.

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