

# Relationship Between Knowledge Management and Organizational Memory in Islamic Azad University

Hadi Rezghi Shirsavar\*

Department of Educational Management, College of Education and Psychology, Garmsar Branch, Islamic Azad University, Garmsar, Iran

## Abstract

The main goal of this research is providing a model to explain the relationship between elements of management's knowledge and organizational memory in private higher education of the country. The following research is correlated from the view point of the applied purpose and implementation method of measurement. Data collection instruments includes researcher's questionnaire made of 33 accents. Structural analysis of the research was confirmed as the formal validity and the reliability of the research tools used was obtained 0.837 was obtained. Statistical Society of this research includes all non-faculty employees of the Islamic Azad university eight regions, who were selected on the basis of the cluster-random sampling and according to Morgan table, which included 378 people considering the whole size of the population. Results of regression testing has been demonstrated to provide a model, on the first place for the components which created opportunities to apply knowledge, on the second for the knowledge organization, on the third for knowledge creation and on the fourth place for components of knowledge collection and supply.

## Keywords

Organization, Knowledge, Knowledge Management, Organizational Memory, Islamic Azad University

Received: May 21, 2015 / Accepted: June 6, 2015 / Published online: September 25, 2015

@ 2015 The Authors. Published by American Institute of Science. This Open Access article is under the CC BY-NC license.

<http://creativecommons.org/licenses/by-nc/4.0/>

---

## 1. Introduction

The role of management's knowledge is creating knowledge of the workplace. In modern organizations, the word, knowledge of workplace refers to various dimensions of activity in the workplace, job evaluation, assessment of the processes and sharing experience in the organization. Bots and Bruin (2002) Believe that the best way to evaluate an organization's management's knowledge can be determined through increasing competitiveness of organizations in variable condition of today environments.

On the other hand many other concepts were flourishing through management's knowledge concept; which is the concept of organizational memory. Organizational memory includes: Storage and retrieval of old organizational

knowledge in order to use it for the present and future. In accordance with title, initially we would provide a definition for management's knowledge and then present a historical approach for that and then introduce the organizational memory and its characteristics, and finally the appropriate models and practical suggestions would be offered. A review of management's knowledge and organizational memory Literature: Knowledge is a fluid composition of experience, values, objective information and expert in sight that provides a new framework to evaluate and create new knowledge through knowledge and previous experience. (Butler 2003).

Management's knowledge is an amazing combination of strategies, tools and methods. (Some of which may not be so fresh.) (Cepeda and Others 2004).

---

\* Corresponding author

E-mail address: rezghih@yahoo.com

Nissen (2002) believes that management’s knowledge is a set of factors which are more or less the same or opposite such as:

1. Organizational knowledge
2. Cognitive knowledge
3. Verbal knowledge
4. Information technologies such as: Knowledge-based systems, Management documents and Office automation.
5. Library and Information Science
6. Anthropology and Sociology
7. Practicing and learning
8. Related studies of communication
9. Participation of different technologies in order to provide an objective (Such as participation of the computers, Internet and many Web-based technologies (Nissen 2003).

But the nine list of Nissen isn’t considered comprehensive and complete according too many experts and other factors could also be added.

Knowledge divides into two main categories of explicit knowledge and tacit knowledge in another categorization. This classification has been derived from a famous Polanyi’s sentence (1966). “We know more than what we say” he explained (Klein 2004). Klein comments these in a simple definition in terms of explicit knowledge and tacit: Calculating, writing and formatting. It is very difficult to make forms and charts of tacit knowledge. On the other hand the explicit knowledge is countable, recordable and can be plotted in the form of words, text or image. Adams, G. and others (2003) consider the key indicators of knowledge management as below:

1. Development of new knowledge.

**Table 1.** Development of management’s knowledge (Dooley and others, 2002).

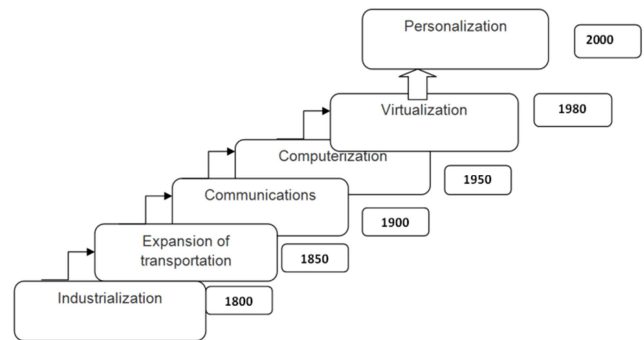
1969	1985	1988	1991	1994	1997	1998	2000
creation of panet-R	expansion of IT	<b>Create Companies knowledge</b>		Development of virtual organizations	Measurement of intellectual capital	expand bench marking	The first application of knowledge management in universities
		Creating Learning Organizations	Measurement of intellectual property				

Components and the main dimensions of knowledge management in theories and numerous researches are more or less different. For example, studies of Dimitrios-Amiris and others (2004) show that community building, external storage, and internal composition are considered among the most important aspect of management’s knowledge component (Amrys, 2004).

Davenport and Dylang (1998) express four goals of management’s knowledge systems in operations below:

2. Access to reliable knowledge outside of the organization.
3. Applying existing knowledge in decision making.
4. Linking the existing knowledge in the organization with processes, products and services.
5. Demonstrating existing knowledge in the organization in the documents, data and software.
6. Facilitating knowledge growth in the organization through culture and social trust.
7. Transfer knowledge to the parts of the organization.
8. Using new methods to evaluate knowledge in the organization.

Dooley, k .j and others (2002) provided timetable for development of theories and concepts management’s knowledge. It refers two main courses, including the first period from eighteenth century the Internet creation and the creation of the Internet up to now.



**Figure 1.** Management’s knowledge development Schedule (Dooley, k. j and others 2002).

The first table that follows shows the development of a management’s knowledge concept since the creation of the primary structure of the Internet up to now.

1. To create storage and repositories of knowledge
2. To improve access to knowledge;
3. To increase environments for knowledge ;
4. To manage knowledge as an asset (quoting Shahgholyan, 2007).

Feliciano (2006) has identified four main functions for the management’s knowledge process in his investigation which include:

1. Internal storage: Is the process by which people try to internalize explicit knowledge to create tacit knowledge.
2. Exterior building: Is the process by which people are trying to convert tacit knowledge in to explicit knowledge through documentation, Oral expression, conferences and workshops etc...
3. Composition: A process, in which people create new knowledge through learning various physical sciences, and increasing their objective knowledge.
4. Social Development: is a process which enables people to deliver their tacit knowledge in different ways and through communicating (Feliciano, 2006)

But Kalpyk and Burns (2006) consider process of knowledge management a 9- steps process that include;

1. Collect and supply
2. organize
3. storage
4. maintenance
5. analysis
6. Creation of Knowledge
7. presentation knowledge
8. Distribution of Knowledge
9. Creating opportunities to apply knowledge (Kalpyk and Burns, 2006).

Despite the extensive literature related to knowledge management, little literature is available in the field of organizational memory. Walsh and Aung San (1991) introduced: the concept of organizational memory in to the management literature for the first time (Hansen, 2002). They believe that Organizational memory is considered as one of the important aspects of the historical memory of an organization. Organizational memory can be seen practically and frequently in organizations .For example, in a leading university or a research organization removing or deporting a person can damage that place greatly and this damage will be recorded an organizational memory. On the other hand, recording current knowledge can be used in future as one of the main parts of the organizational memory (same: 11).

The concept of organizational memory has been disagreed on by the researchers is of different fields of science, including psychology, sociology, theorists of communication, information systems and management.

Stein (1995) has recalled three major reasons for developing the concept of organizational memory as below:

1. .Memory usage is a functional metaphor which has

granted a new insight in to the lives of organizations.

2. Organizational memory has been integrated in to the many theories.
3. Organizational memory is associated with managerial experience (quoting Hansen, 2002).

To many researchers, the concepts associated are with organizational memory controversial and problematic. Some researchers believe that the existence of is still under question. Is this concept a significant expansion? Can it be considered for all organizations?

Totally according to Olivera view point questions in the field of organizational memory can be summarized as bellow:

1. Can we claim that organization has memory? Is organizational memory basically derived from the human memory?
2. What is the relationship between organizational memory and management's knowledge in the organization?
3. Is the organizational memory stored in the memories of people or is it accumulated in some other place?
4. How is the executive function of the organizational memory?
5. How effective and efficient are major and minor components of organizational memory? (Olivera, 2000)

Researchers have offered different answers in response to the question of where indeed organizational memory stands? Walsh and Sange (1991) believe that organizational memory is stored in the memory of individuals. On the other hand Weick (1979) believes that organizational memory lies in the production and personality of organization and any organization requires to strengthen its organizational memory for its survival (same 8).

To express the relationship between management's knowledge and organizational memory, Prusak and Davenport (1998) believe that organizational memory is one of the principal components for management's knowledge in organization. They believe that there is little distinction between this organizational memory and management's knowledge.

Schwartz and others (2000) shall approve the same opinion and there is a close relationship between them.

Abecker (1998) believes that organizational memory enlightens the perspective of management's knowledge in an organization. He believes that, organizational memory can one of the important tools in preventing errors in the management's knowledge in an organization. Many other researchers believe that organizational memory and management's knowledge concepts are completely related to

each other and can sometimes replace each other (Sharif, 2002).

The tools in the maintenance of knowledge in organizations are listed below:

**Table 2.** Maintaining knowledge tools in an organization (Source: Sharif, 2002).

Theorist	Tool
Nelson and Winter (1982)	Behaviors, practices and routine and unusual patterns
Stein (1995)	Routine standard methods
Leonard - Barton (1992)	Expert and efficient management systems
Eisawyand others (1986)	Human Resource Organization
Cook and Yanov (1992)	Culture
OliveraandArgot(1999)	The product
Campbell - Kelly (1996)	Physical artifacts produced in the organization
Stein and Zwass (2000)	Computer-based information systems

To understand the differences between knowledge management and organizational memory, organizational memory resources are mentioned in the following table; In general, the main component of organizational memory is divided into two categories: inside organizational and outside the organization:

Totally, different researchers believe that there are several points of differentiation between the organizational memory and management's knowledge; one as mentioned above which is preserving these two sources. Even Tenni and Weinberger (2003) consider these three main roles in the organization's institutional memory:

1. The role of information

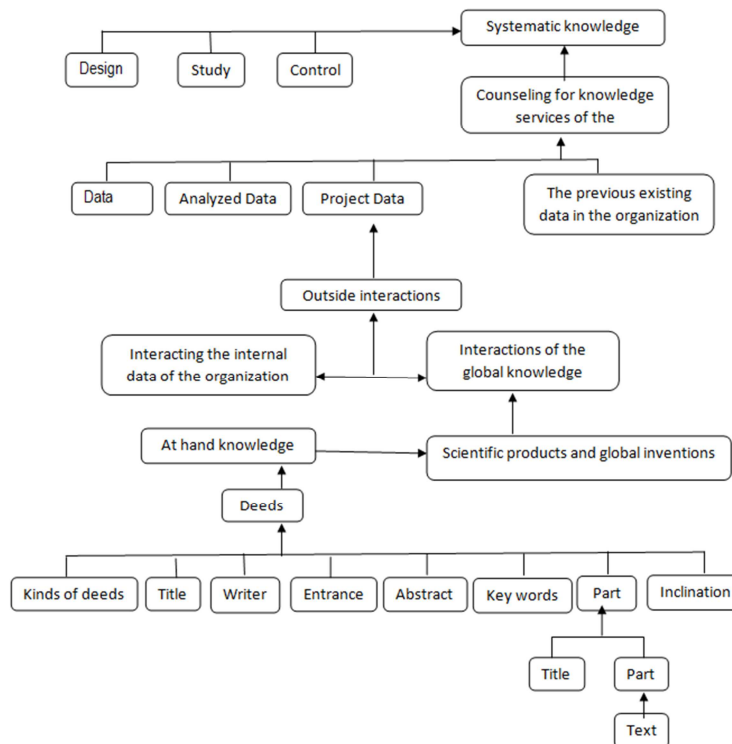
2. Performance control

3. Political role (in decision making, policy, creating perspective and mission of organization) (Tenni and Weinberger, 2003).

**Table 3.** Organizational memory resource (Source: Walsh and Aung Sanin 1991, quoted by olivera, 2000).

A) The internal dimensions
Human Resource Organization
Culture
Functional procedures and guidelines(Instruction methods, roles and organizational systems)
Structures( particularly its role in the organization)
Ecological(physical characteristics, workplace of human resources)
B)The dimension related to outside the organization
Storage of News, information and the image of organization outside the organization

Another definition of organizational memory system is based on knowledge, where knowledge acquisition is the most important component of the growth for such a system. In the past, knowledge acquisition was accompanied with emphasize the complexity mental. But today this new idea says that in addition to mental data the organizational memory concept a new thought has been added to this category; and any organization requires software's and hard ware's store to organizational knowledge organization in the memory because human memory can't record long-term and high volume of data. Ontology model of development in organizational memory engineering services can be diagram as below:



**Figure 2.** Organizational memory engineering development model (source: Jeraldo and Jeraldo, 2007).

Hanvanich and others (2006) introduce organizational as memory, gathering and storing the needed knowledge in an organization which is associated with presented a particular phenomenon. After doing many researches in several

different organizations, they interactive the model of organizational learning and organizational memory that described as the following diagram:

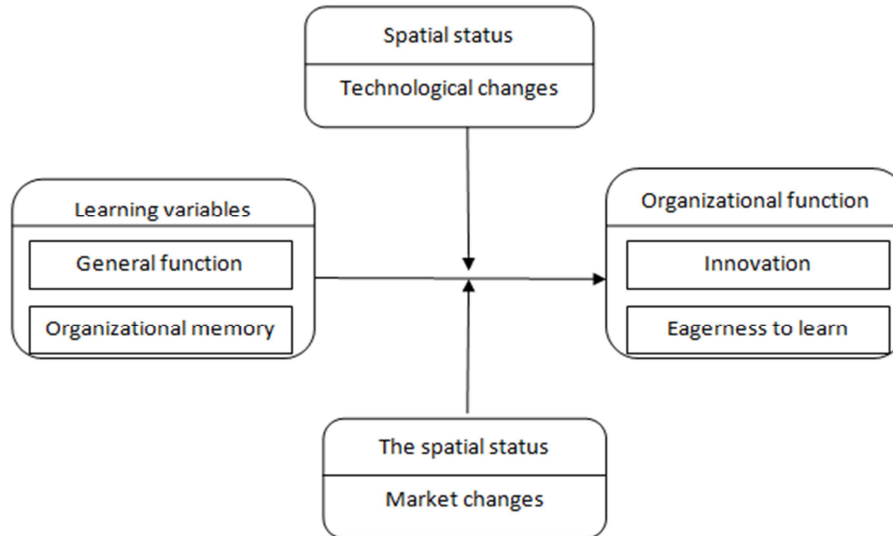


Figure 3. Interactive model (source: Hanvanich and others, 2006).

According to the research title, the main objectives of this study include: To identify the main components of knowledge management and organizational memory and to determine existing situation of the components and provide a model in order to explain the relationships between the predictor variables which are the components of knowledge management and the criterion variables i.e. organizational memory.

## 2. The Research Method

With regard to the purpose and nature of the research, this study is a correlation and descriptive survey in terms of the application and methods of implementation. The linear regression model will be used through OLS method. For model presentation data collection tool is questionnaires, designed by the researches for knowledge management, organizational memory. The study population consist all non-faculty employees, of the Islamic Azad Universities region eight. Due to the size of population (5300 people), minimum number needed according to Morgan table research is 361. Considering the 10% probability of was not returning of questionnaires, 397 questionnaires were distributed, 378 which completely filled returned to the researcher faculties. The sampling method was a simple random one. In this way at first two faculties of were selected through the members of the sample were chosen through sampling from these faculties. Due to the identical size of non-faculty from the

mention units as main options and employees all the mentioned units and given that all these units are part of comprehensive units, the sample size are almost identical for all these units. Clearly saying, proportions aren't so different that the sample size needs to be determined through method Clusters proportion. In fact consist of nearly 54 people for each university unit and 27 people for each faculty from the researched sample. Measurement tool in this study is the questionnaires 37 buoys designed by the researcher which includes 27 buoys to measure 9 dimensions of knowledge management and 10 items buoys to measure the 2 dimensions of organizational memory. Validity of research instruments was recognized, through distribution among a few professionals in higher education formally. There liability of the tool considering the LIKERT range was calculated through calculating Cronbach's alpha for the whole questionnaire the figure was obtained in a sample of 30 patients after a distribution 0.837. Factor analysis tests to determine the T-test factors, to determine the existing conditions and linear regression to explain the model to analyze were used the findings of the research.

## 3. Finding Research

### 3.1. What are the Main Components of Knowledge Management

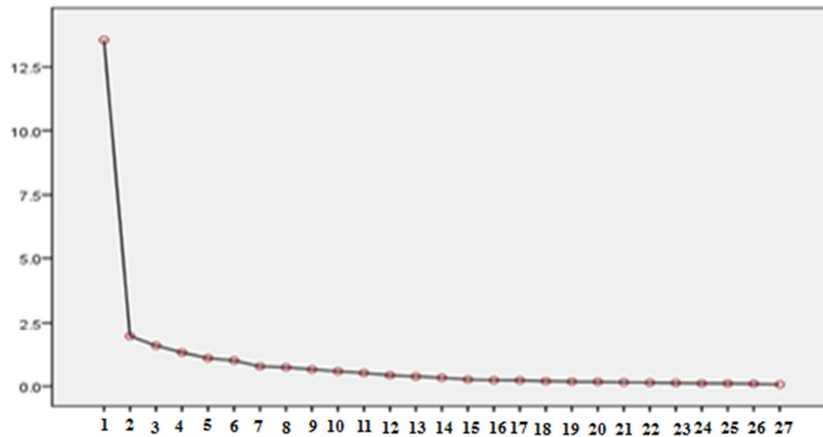
A review of research literature and in accordance with components developed by Kalpik and Burns (2006) show

that, the most important component of knowledge management include: Collecting and providing the knowledge, organization knowledge, storing knowledge, maintaining knowledge, analyzing knowledge, creating knowledge, personating knowledge, distributing knowledge and creating opportunities to apply for knowledge. To measure the dimensions of each of the mentioned dimensions, three buoys have been developed and after being distributed in the test sample and also doing factor analysis study the result come out as follows:

**Table 4.** Bartlett's Test of Sphericity.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.916
Approx. Chi-Square	9390.870
df	351
Sig.	.000

The results which were gained through Kaiser-Meyer-Olkin Square test with results indicating 9390.870 show that level factor analysis is acceptable significantly with very higher liability.



**Figure 4.** Knowledge management component factor analysis.

The results gained from the above diagram show that these components were selected as the main dimensions of management’s knowledge from among the nine mentions ones: assemble and supply knowledge, organize knowledge, store knowledge, create knowledge, distribute knowledge and create opportunities to apply for knowledge. Also among the 27 items reviewed, buoys were deleted due to overlap is deleted and totally 18 buoy remind for the six components.

according to components developed by Walsh and Aung San (1991), the most important component of organizational memory consists of internal and external aspects of organizations.

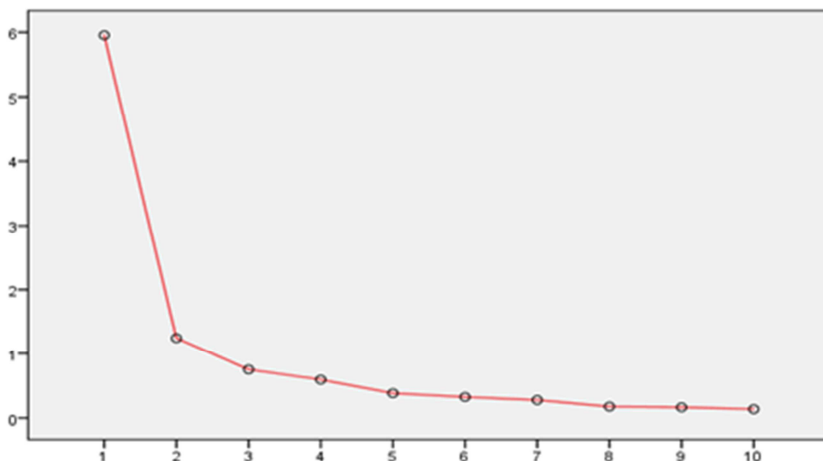
**Table 5.** Bartlett's Test of Sphericity.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.967
Approx. Chi-Square	2874.479
df	45
Sig.	.000

The result of Bartlett's Chi Square test holding a 2874.479 show that, Significant level factors analysis is acceptable analysis with very high reliability.

### 3.2. What Are the Main Components of Organizational Memory

With the help of a review of research literature review and



**Figure 5.** Factor analysis of organizational memory components.

The above graphs shows the results of the two components have been approved. Also among the 10 items four buoys were deleted due to overlap and there remain 6 buoys.

### 3.3. How Is the Main Components of Knowledge Management Case Study

**Table 6.** T-test component of knowledge management

Component status	The significance level	Average	t	Title	
Favorable	0.004	13.88	4.532	Collecting and providing knowledge	1
Weak	0.593	7.71	0.534	Organizing knowledge	2
Favorable	0.008	11.21	5.109	Storing knowledge	3
Favorable	0.001	10.73	3.435	Creating Knowledge	4
Weak	0.502	3.26	0.671	Distributing of knowledge	5
Weak	0.125	5.33	1.246	Opportunities to apply for knowledge	6

The results of the t-test and the total state collection supply of components. Storage of knowledge and knowledge are desirable. But the components of organizing knowledge apply, distributing knowledge and creating opportunities to for knowledge is weak.

### 3.4. How Are the Statues of Main Component of Organizational Memory in Sample Study

**Table 7.** T-test component of organizational memory

Component status	The significance level	Average	t	Title	
Favourable	0.018	10.82	6.301	Internal dimensions	1
Weak	0.107	4.33	0.181	External dimensions organizational	2

The results of the t-test show, the internal dimensions of the components of the core component of organizational memory and desirable components of the organization is weak.

### 3.5. What Model Can Be Associated with Components of Knowledge Management and Organizational Memory in a Sample of the Study Explained

**Table 8.** Variables Entered/Removed<sup>b, c</sup>.

Model	Variables Entered	Variables Removed	Method
1	Opportunities to apply knowledge, collection and supply of knowledge, knowledge storage, knowledge creation, knowledge organization, knowledge distribution		Enter

a. All requested variables entered. b. Dependent Variable: Organizational memory c. Linear Regression through the Origin

The results of table 8 show that OLS method is used for data analysis. Also to apply the model, all variables were entered together.

**Table 9.** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.966a	.934	.932	33.257

Predictors: Create opportunities to apply for knowledge, collection and supply of knowledge, knowledge storage, knowledge creation, knowledge organization, knowledge distribution.

As Table 9 shows, the amount (R<sup>2</sup>=0.932) means that almost 93% of the variance of knowledge management is explained by organizational memory. In other words, 93 percent of the dispersion observed in the components of knowledge management of the universities region eight is explained by the components of organizational memory.

**Table 10.** ANOVA<sup>c, d</sup>.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5561493.680	6	926915.613	802.436	.000 <sup>a</sup>
	Residual	429707.320	372	1155.127		
	Total	5.991E6 <sup>b</sup>	378			

a. Predictors: Opportunities to apply knowledge, organize knowledge, knowledge creation, knowledge storage, collection and supply of knowledge, distributed knowledge b. This total sum of squares is not corrected for the constant because the constant is zero for regression through the origin c. Dependent Variable: Organizational memory d. Linear Regression through the Origin

As Table 9 shows, the amount (R<sup>2</sup>=0.932) means that almost 93% of the variance of knowledge management is explained by organizational memory. In other words, 93 percent of the dispersion observed in the components of knowledge management of the universities region eight is explained by the components of organizational memory.

Table 11. Coefficients<sup>a, b</sup>.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	Collecting and providing knowledge	.893	.490	.286	3.824	.019
	Organize knowledge	.732	.396	.344	4.846	.000
	Storage of knowledge	-.318	.432	-.061	-.738	.461
	Knowledge creation	1.851	.464	.306	3.990	.000
	Distribution of knowledge	.425	.453	.083	.938	.349
	Opportunities to apply for knowledge	1.734	.409	.462	4.242	.000

a. Dependent Variable: Organizational memory. b. Linear Regression through the Origin

F value in the previous table shows that there is a linear relationship between the predictive and criterion variables. Table 11 results show that, the beta coefficient related to the storage component is negative knowledge. Referring the statistics and significance level, it can be judged that these components cannot predict components of knowledge management. On the other hand the calculated beta levels are positive in the other five components. The amount calculated for the beta component is located in the first place to apply for knowledge, in the second to organize knowledge, in the third to create knowledge and end up in the fourth compile and provide knowledge. Also measure to the achieved and significant level of knowledge shows that in spite of positive beta about the component distribution, this component has little ability to be predicted and explained so It can be concluded that a total of only four components out of the six knowledge management can be explained, organizational memory through the variable.

## 4. Summary and Conclusions

Organizational memory is a result of present and past performance of the organization which can perform as part of knowledge management or independently. Organizational memory can be used for decision-makers and planners of the organization to compete in today varying conditions.

However, as described in this paper there is no common consensus, between the researchers and scholars in various fields of science, including management of organizational memory. It is essential to caring out further research in this field.

Searching for articles, books and related resources to organizational memory and in this area, shows that enough review field investigation (the author of this article also the same problem).

Generally considering all the arguments in the field of organizational memory and knowledge management, paying attention to the third millennium it can be concluded organizational memory that is considered one of the requirements of organizations. Whether we consider it as one

of the requirements for knowledge independently management in organizations, or investigate and scrutinize.

## Recommendation

The above recommendations are presented below:

T-test results show that some of the main components of knowledge management including the organization of knowledge, distribution of knowledge and creation of opportunities to apply for knowledge are at a weak level, it is essential to present an appropriate solution to improve and support the mentioned components in the universities. For example, application of new technologies can help to improve the current situation, it is essential for the universities to pay attention to issues related to the commercialization of science to improve creating opportunities to apply for knowledge.

T-test results on the field of the institutional memory components show that the level of out of the organization component dimension is weak. It is necessary for the universities to carry out practical measures to strengthen the organization. University students and graduates can play a leading role in strengthening the organizational external memory in society.

More attention to translation and compilation of literature related to theories of organizational memory, in public and private organizations and institutions in order to clarify the role of organizational memory.

Organizational methods of learning and maintain once of old and new knowledge through individuals or new tools is called organizational memory. Therefore it is necessary that not only new tools get used to store knowledge but also human resources the importance of their special role and place.

Today developing knowledge management is greatly emphasized on the organizations; while organizational memory is not considered very important. Are views of research literatures show that there is a close relationship between components of organizational memory and



knowledge management and it is essential that these two components be studied and researched parallel together?

Knowledge management the overall and unavailable look knowledge of the organization; While organizational memory refers to existing past and present and functional knowledge of the organization. Therefore to investigate and evaluate, organizational memory before any investigation it is necessary in the field of knowledge management.

Knowledge management has a divergent perspective toward knowledge; that's why it can play a functional role for high-ranked manager's decision makers and policy makers, on the other hand organizational memory has converged perspective. Generally it is more practical and more understandable, for executives and human resource of organization, therefore it is necessary to prepare the results of knowledge management for senior managers and the results of studies related to organizational memory be offered basic and middle managers.

As mentioned in the article, memory restoring resources and knowledge are slightly different from each other in the organization. Therefore it is necessary for senior managers of organizations to record more function knowledge and memory through knowing shared and different resources of the organizational memory and knowledge to used it in future decisions.

In several studies non-memory organizations (organizations Markey), are called aimless organization. The organization's goal is determined by the organizational memory. Therefore, managers should focus more attention to the theory of organizational memory.

Memory management is slightly different from knowledge management. Memory management is directly collected and stored by managers and base staff, while in the process of knowledge management this complex is as part of the process of knowledge management. Therefore it is necessary to recognize the important role these individuals to be train, and everyone know what management he is after memory or knowledge?

Human resources are considered one of the tools to restore knowledge and memory in organization, therefore, it is necessary to plan necessary sketches in the organization preserve and enhance human resource.

Service training and changing reward systems for promotion in job (According to disciplines rather than relationship) and

soon can greatly help to maintain efficient and remarkable human resources.

## References

- [1] Adams, G. L., & Lamont, B. T. (2003). Knowledge management systems and developing sustainable competitive advantage. *Journal of Knowledge Management*, 7(2), 142-154.
- [2] Anand, v & others. (1998) organizational memory approach to information management. *academy of management review*, 23(4), 796-809.
- [3] Butler, t. (2003). from data to knowledge and back again. *The journal of corporate transformation*, 10(41), 144-155.
- [4] Dooley, K. J., Corman, S. R., & McPhee, R. D. (2002).A knowledge directory for identifying experts and areas of expertise. *Human Systems Management*, 21, 217-228.
- [5] Emiris, M. Dimitrios & others (2004); Towards a holistic knowledge management model, *journal of knowledge management*, vol, 8, P: 32-46.
- [6] Feliciano, Joe L (2006); *The Success Criteria for Implementing Knowledge Management Systems in an Organization*, Doctor of Philosophy thesis Pace University September.
- [7] Giraldo, Gloria Lucía, Giraldo, Germán rrego (2007) *Organizational Memory for Knowledge and Information Management in the Definition, Analysis and Design Phases of Civil Engineering Projects using an XML Model*, available on: [www.Springerlink.com](http://www.Springerlink.com).
- [8] Hansen, M.T. (Ed.) (2002) *Knowledge networks: Explaining effective knowledge sharing in multiunit companies*. *Organization Science*, 13(3), 232-248.
- [9] Kalpic, Brane & Bernus, Peter (2006); *Busines process modeling through the knowledge management perspective*, *journal of knowledge management*, vol: 10, P: 40- 56.
- [10] Klein, M. (2004). *Change management in distributed anthologies*. PhD Thesis, available at: [www.proquest.com](http://www.proquest.com).
- [11] Nissen, M.E. (2002). An extended model of knowledge flow dynamics. *Communications of the AIS*, 8, 251-266.
- [12] Olivera, F. (2000). Memory systems in organizations: An empirical investigation of mechanisms for knowledge collection, storage and access. *Journal of Management Studies*, 37(6), 811-32.
- [13] Shahqolyan, K. (2007) *design management's knowledge evaluation pattern in industrial organizations of Iran*, PhD thesis, Department of Basic Sciences.
- [14] Sheriff, k. (2002). *barriers to adoption of organizational memories: lesson from industry*. Thompson learning, U.K. available on [www.gigapedia.com](http://www.gigapedia.com).