Identification and prioritizing of effective factors on knowledge management system success using AHP technique

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Abstract: Knowledge management (KM) is a process give support to an organization makes huge from small power. The knowledge management (KM) is identified as a novel method for organization management and distribution of its available intellectual and scientific resources. Executing the knowledge management (KM) involves preparing the appropriate backgrounds. Of these backgrounds, required coordination among different organizational components is one. In the present research, thorough meticulous study of major success factors in execution of knowledge management (KM) performed by various researchers and scholars either theoretically or empirically, 5 core factors have been recognized. In following, based on these major factors as well as related components, a tool in form of a questionnaire was developed to determine their significance and priority from knowledge management experts' viewpoint. Certain statistical tests during the survey were applied to measure the reliability and validity of the questionnaire including structural validity assessed via factor analysis method. Regarding the experts' remarks and hierarchical technique, these factors were weighed and prioritized. The prioritizing of the effective factors on the management system achievement are, 1) being a learning organization, 2) organizational culture, 3) knowledge management strategy, 4) leadership and 5) creation of motivation respectively.
[Ebrahimi Z. **Identification and prioritizing of effective factors on knowledge management system success using AHP technique**. *Life Sci J* 2013;10(6s):234-245] (ISSN:1097-8135). http://www.lifesciencesite.com. 36

Key words: major success factors, knowledge management, analytical hierarchy process (AHP)

1. Introduction

Time requirements of the new millennium have urged organizations perform differently. In response to this demand they have included two complexity and perturbation concepts in their changes. These transformations having been occurred so rapidly and competitively that giant organizations grew in the 20th century could survive no longer in the emerging world of 21st century. In these new environments, to keep their survival and success, organizations require natural systems and their feedbacks to recognize the changes as soon as they can and adapt themselves accordingly. This issue consequently has attracted organizations toward the concept of knowledge. With its unique and dynamic characteristics, knowledge, prepares setting to response the new environmental stimuli. Enough to say that significance of knowledge and knowledge application in different area have been repeatedly discussed by social scholars to construct a classless society and fair distribution of knowledge. In organizational and management scale it also has been counted as a key to survival, achievement and attaining a sustained competitive advantage and in economy as a strategic asset. From this view, knowledge is an intangible asset has increasingly been more important than traditional asset in new economy. In past, the value of an organization was measured according to its tangible capital and properties, though in the third millennium the intangible assets are the best an organization may have.

To exploit the high value of knowledge different solutions have been proposed. In the current study the knowledge management (KM) is introduced as a modern approach for utilization and development of organizational intangible properties. KM focus is on value creation i.e. managing the existing knowledge and changing it into the useful knowledge in organization. Many organizations through concentration on KM and knowledge extensive investment seek to find the advantages could be obtained by KM. the successful implementation of KM needs a comprehensive look at various organizational factors. The major challenge of organizations then would be understanding KM and how to implement it. Thus, one of big ambitions of any organization is to define a proper KM system and manage it efficiently. This may be impossible unless the major factors of KM system success become specified. In recent years " knoweldge mangement" has been known as a critical debate in commercial contexts. Both commercial and scientific communities believe that via the power of knoweldge organizations can preserve their long-term superirities in compitative fileds.

1-2-the concept of knoweldge mangment:

The knoweoldge mangement (KM) consists of all solutions by them an organization manages its knoweldge properties including how to collect, store, transfer, use, develop and finally create knowledge. KM is indeed a systematic process of discovering, selection, organization, summarizing and presentation of information in a way it helps individual to acquire more about his/her favorite area. As a matter of fact, KM gives a support to an organization to gain knowledge and insight from his past experinces. then concentrates his acitivity to acquire, store and use knowledge in order to enjoy it in resolving problems, dynamic education, strategic programming and decision-making. KM not only prevents dettrioration of intelectual and mental properties but also adds up to this wealth frrqently.

The ability of KM in today knowledge-based economy plays a vital role. Creation and share of knowledge have been shaped into major competitive factors. At the beginning, KM defined as a process to apply a systematic approach to gain, organize, manage and distribute knowledge in an organization to do things faster, reuse the best solutions and reduce duplication.

According to Dalker (2005), a good definition of KM involves a synthesis of gaining and storage of explicit knowledge accompanied by management of intellectual assets. After reviewing over than 100 definitions on KM finally recap them within three perspectives:

1. Business view: the knowledge management is a commercial activity containing two major aspects, a concerning the element of knowledge in business activities as the explicit constitute of any business can be reflected in an organization's strategy, policy, and procedure and in any level. It also refers to establishment of a direct relationship between intellectual properties and positive results (Barklage and Moray, 1997). Accordingly, KM is a syntactical and cooperative approach for creation, acquisition, organization, access and use of organization's intellectual assets (Garry,1996).

2. the cognitive –science perspective: knowledge, insights, perceptions, and technical knowledge allow us a basic source to perform wisely. As times passes, the knowledge takes other forms i.e. books, technologies, procedures and rituals inside an organization specifically and in a community generally. These developments bring accumulation of

experiences when used properly will augment effectiveness. Knowledge recognizes as one of main factor makes intelligent personal, organizational and social behaviors possible.

3. process-technology perspective: according to (Wick, 2001),KM is a concept based on which information transform into practical knowledge and then by a little difficulty could be usable for its users. In this regard, KM involves the processes of acquisition, recording, transfer, creation and utilizing knowledge in an organization to be able to establish and maintain a sustained competitive advantage as well as increase of business performance.

Modern firms at present need to seize, manage and expolit knowledge in direction to higher efficicny, customers' satisfaction, compitative management, and step forward to confront and acclimate with non-stop enviornmental changes. KM describes as a systematic process of creaion, acquisition, organization, access and use of knoweldge and experinces in a firm. In educational organizational it contributes to imporvement of taking decisions, reater flexibility, reduction of work difficulty, increase of efficicny, establishement of new career opportinities, loss of costs, and improvement of employees' motivation.

KM is a tool to cope with organixation's problems.

Indeed it is such worthy that the most crucial propoerty an organization may have is thi intelectual asset. Increasngly, KM defines an integrated exchange process for most of organizations. Studies show that for either small or large firms, knoedlge is vital since knowing about customers and their needs matter. Those firms responding to these needs may be hopeful to keep their compitative situation.

The resources and compitative landscapes of organizations show the effects of this persepctive in strategic fields of commercial firms....KMN

The significance of this study derives from the determination of effective factors and their order of effectiveness via a quantitatively precise means in different environments such ad banks could be influential on explanation of KM system behavior and its effective factors. In other words, describing the behavior between effective factors and achievement of KM system sound to be a scientific need, so the present study moves in this direction. Practically, since the Parsian Bank has been classified among developing organizations either for service or research nature, it must concentrate consequently on relevant subjects like learning and knowledge management. Regarding the field of KM in Iranians banking system has been counted one of the most important issues. Thus, the main purpose of this study is to evaluate, determine and prioritize the effective factors on KM system in selected branches of Parsian Bank of Tehran province through AHP technique.

Key factors of success:

Literary speaking, key factors of success has been described differently. Rockart (1979) defines

one of the most permanent definitions. He believes that the key factors of success include a limited number of work areas which contain a successfully competitive performance. In other definition, Bruno and Leidecker (1984) state that the key success factors consist of: characteristics conditions or measures if get appositively managed, they will leave considerable impact on achievement of competitive performance of the organization.

However, Pinto and Slevin (1987) find the key factors as those which saliently improve the chance of projects execution. In domain of strategic management, the concept of key factors of success covers a broader comprehensivity that is a sign for an ideal tie between environmental conditions and business features Skyrme, Amidon and Debra (1997) identified 7 key factors of KM implementation including: 1) Benchmarking and knowledge of effective strategies 2)architecture and landscape, 3) leadership of knowledge, 4) culture of creation and sharing of knowledge, 5)developed infrastructures of technology, 6)permanent learning, and 7) processes of organizational knowledge.

In their study, Holsapple and Joshi (2000) they discovered some other key factors of success.

At first, they examined the KM literature and extracted a group of factors and finally through using Delphi technique in a pool of experts consisting of international professional and researchers of KM evaluated the identified factors. They introduced three major classes of impact (management, resources, and environmental) within which the key factors are at heart of these impacts.

The management influencing factors possess four key factors such as coordination, control, leadership and measures. The resource affecting factors are to be knowledge, individuals, financial and non-financial resources., though, the environmental influencing factors known to be competition, markets, time emergency, economic and governmental atmosphere (Davenport, T., De Long, D. and Beers, M. 1998).

Davenport et al (1998) performed an exploratory study and a KM project in 24 firms. By this extensive research they aimed to determined the relevant key factors to implementation of KM. of 18 successful projects, seven key success factors were identified as, a) value of industry, b) shared language and purpose, c) flexible and standard structure of knowledge, d) multiple channels for transfer of knowledge, e) knowledge-friendly culture, f) technical and organizational infrastructures, g) motivational efforts and support of senior manager (Davenport, T., De Long, D. and Beers, M. 1998.(

Chouridesh et al (2003) revealed various key factors for successful implementation of KM in organizational task areas which strategy, human resources management, information technology, marketing and quality are among them (Chourides, P., Longbottom, D., Murphy, W. 2003).

In a study carried out by Hung et al (2005) on specifying the key success factors of KM implementation for the pharmaceutical industry. Seven factors were identified effective: a) benchmarking strategy and knowledge structure of effectiveness, b) organizational culture, c) information system infrastructure, d) employees' conflict and education, e) leadership and strong commitment of senior management, f) educational environment and control of resources, g) evaluation of professional training and team work (Hung, Y.C., Huang, S.M Lin, Q. Tsai, M.L 2005**).**

Table 1: list of main factors of KM success from different professional viewpoints:

Main factors of success	Type of attribute	Related studies
1.leadership and senior management backup	Acceptance of KM system-encouragement of new opinions-supporting KM projects	Davenport (2001) - Dess, G. and Picken (2000) - Moffett (2003)
2. benchmarking	Record of experiences and researches-benchmarking solutions-comparison of work processes of the faculty-presence of benchmarking processes-encouraging benchmarking	Davis, T (1996) ، Drew(1997), S ،Davenport (1998) ، Moffett (2003)
3.architecture of knowledge	Mechanisms of KM establishment-improving knowledge standards- drawing the future of knowledge –based firm-attention to acquisition and share of knowledge	Davenport (1998) ، Buckman (1999) ، Greco (1998) ،Tynan (2003)
4.employees' conflict	Vision of the knowledge-oriented firm-concerning knowledge acquisition and sharing	Wilson (1999) ،Moffett (2003)
5.information systems infrastructure	User friendly systems-IT infrastructure-training of use of IT-internal sites-databases-artificial debate mechanisms-networks for distribution of information resources-appropriateness of IT	Davenport (1998) ، Greco (1999)، Savary (1999) ،Lee, S.M

	with KM-use of DSS-ES	(2002)
6.strategy and purpose	Setting knowledge based perspective-appropriateness of professional strategy and KM-setting goal in creation of knowledge cycle-attention to innovation strategy-attention to KM because of competitive environment	Chourides(2004), P (2003)، Mathi, K (2003).. Khalifa, M. and Liu
7.measurement of knowledge	Assessing performance based on improvement of knowledge-learning priorities for learning-designing proper mechanisms of knowledge assessment-attaining the proper measures for knowledge assessment-knowledge property as a measure for performance	Mathi(2005), K (2004) ، Hung, Y.C Kuan (2002)
8. organizational infrastructure	Simplifying structure of exploring new knowledge-supporting structure of collective behavior-processes of knowledge exchange-network structure for sharing of knowledge-processes of knowledge transfer to the organization-allocation of resources with knowledge development approach	Hung (2005) ،Kuan (2002)، Davenport (1998)
9.training	Training s of problem solving and creativity-training of knowledge transfer methods-participation in internal and external trainings-transfer of knowledge with mentor-follower system-training methods of group learning support-training methods of supporting systematic thinking	Greengard (1998) ، Cohen (1999)، Moffett (2003)
10.human resources management	Development of human resources program-necessity of publishing studies-employment of individuals based on knowledge competence-priority to development of knowledge human resources-payment based on knowledge1- quality-progress based on knowledge competence-maintenance of knowledgeable employees- mechanisms for reflection of scientific comments	Chourides (2003) ، Kuan، Davenport (2002) ,Grover (2001)
11.motivation	Rewarding knowledge actions-encouragement of innovation-valuing knowledge creation-encouragement of group work	Yahya (2002) ، Hauschild (2002 ،Gibbons (1998)
12.organizational culture	Discussion about strategy and policy of the faculty-culture of innovation and creativity- prestigious status for idea makers and innovators of group work	Davenport (1998) ، Buckman (1999) ، Moffett (2003)
13.team work	Sharing knowledge and experience-team making-open and trusty environment-	Greengard (1998) ، Kuan (1999) ،Moffett (2003)

2-research hypotheses:

1. The effect of organizational culture on KM success in Parsian Bank branches of Tehran province is higher above than average.
2. The effect of KM strategy on KM success in Parsian Bank branches of Tehran province is above the average.
3. The effect of organization's leadership on KM success in Parsian Bank branches of Tehran province is above the average.
4. the effect of reward and motivation on KM success in Parsian Bank branches of Tehran province is above the average.
5. The effect of being learning of the organization on KM success in Parsian Bank branches of Tehran province is above the average.
6. There is a significant difference between the impact rates of every effective factor on KM success.

3-Population

The statistical population consists of official and contractual employees and managers of selected branches of Parsian Bank in Tehran province. According to the Administrative Office of this bank they include 91 subjects.

4-the statistical sample:

The present research aims at identification and prioritizing effective factors on KM system success. To this, 2 questionnaires were designed. For the first questionnaire that used to identify the effective factors on KM system success was distributed among 20 university professors and an expert of KM. the second one used to collect data for prioritizing the effective factors on KM system success and was distributed among 76 official and contractual employees of the Parsian Bank branches in Tehran province. They were selected based on

Morgan's table as the sample size. The reliability and validity in these questionnaires were as follows:

5-validity and reliability:

5-1- validity:

By validity we mean the research tool or questionnaire items must measure the variables and the subject
appropriately.
In the current study, the validity of used questionnaires wads defined in form of formal validity. That is the
measurement tools were given to a number of experts and professors and asked them to leave their comments on the
questionnaire validity. After the comments were collected and few items were corrected the researchers concluded
that the questionnaires are highly validated.
Cornbach's alpha Number of questionnaires
5 67/0

5-2-reliability:

To test the reliability, the Cornbach's alpha was applied. The Cornbach's alpha formula is:

$$ri = j\frac{J}{J-1}(1-\frac{\sum S_i^{\,2})}{S^2}$$

Also the Cornbach's alpha for measurement of item reliability is as below.

Number of questionnaires	Cornbach's alpha
5	0/76

As the above tables shows the Cornbach's alpha for the questionnaires obtained $\alpha = 0.76$ It confirms that the study tool reliability is considerable.

6- Multiple Attribute Decision Making (MADM):

A responsibility of managers is to make different decisions thus, you can find out the reason for some of individuals
and firms' achievement. Consequently, the presence of scientific methods to help peoples seems quite evident.
Rarely are one attribute decisions made by individuals and firms since most of them are multi attributing. The multi
attribute decision-making divides into two general categories:
.1Multipurpose decision making and 2. Multi attribute decision making.
In these problems a few of choices are analyzed and ultimately a priority takes place. However, in some occasions
instead of the choice, its equivalents like strategy, factors and etc will be used. Furthermore, as the multi attribute
decision making suggests, there are several attributes which the decision maker has to include them in his/her
problems. These attributes then in relation to every choice will be evaluated**.**

7-analytical hierarchy process (AHP):

Analytical hierarchy process (AHP) is a qualitative and quantitative analysis on multi attribute decision making developed by Saaty. AHP is known as an analytical method makes possible to enter personal opinion systematically. When qualitative and quantities analyses should be considered, AHP would be useful. AHP not only aids analyst to reach the best choice but also prepare a rational explicit principle. Above all, AHP bears no complex computations.
Therefore, no technical mathematical information an analyst needs to master. In fact, AHP determines the priority of a pool of alternatives and their relative importance regarding a specific characteristic. This involves three basic principles:
a) structural hierarchy, b) relative priority of decision making attributes, and c) compliance judgment.
The philosophy behind AHP aims at breaking down the complex and big problems into sub problems in order to categorize them to discover their relationship and consequently making a hierarchical structure. According to a predefined attribute for allocation of relative significance of studied factors, a paired comparison enables the transformation of individual judgments into numerical values as well as directing decision makers to weigh complicated problems via concentration on personal attitudes and preferences only by regarding 2 factors of significance. As a result, they can improve their decisions adaptability. If the level of significance of a component defines in comparison to other in form of a 9 value scale which are listed in Table 1, the measure 1 represents both components are equally important and measure 9 shows that one is much more important than another**.**

According to Saaty the AHP techniques tracks the following steps to operate:

1. Bofre all we specify the purpose of evaluation.
2. We form the hierarchy structure from the highest level, the purpose, then come down to the middle level, the decision making criteria and finally go through the lowest level which consists of decision making alternatives.
3. We compute the components of low-level hierarchy compared to components of higher level and define the paired comparison matrix.
4. Now we engage in assessment of adaptability rate of paired comparison matrix. if C.R. < 0.1 the matrix adaptability will be acceptable and if C.R. > 0.1

obtained results have no application. Therefore, we must change the hierarchy structure or re-initialize the comparison matrix.
5. if the matrixes were adaptive, then we extract the specific vector related to the largest eigenvalue from the matrix and compute the weights.
6. We weigh all of sub-problems till the last hierarchy that is the purpose in order to over the weighing process components totally.

Table 1: paired comparison among the attributes Numerical rating Verbal judgments of preferences

Verbal judgments of preferences	Numerical rating
Extremely preferred	9
Very strongly to extremely	8
Very strongly preferred	7
Strongly to very strongly	6
Strongly preferred	5
Moderately to strongly	4
Moderately preferred	3
Equally to moderately	2
Equally preferred	1

8-research hypotheses analysis:

To test the normality of obtained data, the Kolmogrov-Smirnov Test was applied. The results are shown in the table below.

variable	Kolmogrov-Smirnov Z	Level of significance
culture	1.706	0.102
Strategy of KM	1.464	0.094
leadership	1.653	0.098
Reward and motivation	1.408	0.138
Organization's being learning	1.713	0.086

In test of data consistency the H0 is that the distribution of data follows the normal distribution and the opposite hypothesis imply conversely. According to the above table, the level of significance for most of data achieved over 0.05 that means the distribution of resulted data is normal. Thus, to test the research hypotheses parametric statistics could be useful.

8-1-analysis of hypotheses 1 to 5:

To analyze the hypotheses, the T-test or means of population was used. Since in the questionnaire the Likert's scale was dominant which was scored from 1 to 5, therefore, we took 3 for the population mean. The hypothesis test goes as follows:

$$\begin{cases} H_0 : \mu < 3 \\ H_1 : \mu \geq 3 \end{cases}$$

Based on the statistical analysis of the below tables and upper and lower limit it can be said that:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Culture	76	4.3026	.51691	.05929
Technology	76	4.1316	.37743	.04329
Leadership	76	4.6053	.49204	.05644
O_size	76	4.3816	.58804	.06745
learner_organization	76	4.3289	.47295	.05425

One-Sample Test						
	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Culture	21.969	75	.000	1.30263	1.1845	1.4207
Technology	26.137	75	.000	1.13158	1.0453	1.2178
Leadership	28.441	75	.000	1.60526	1.4928	1.7177
O_size	20.482	75	.000	1.38158	1.2472	1.5160
learner_organization	24.496	75	.000	1.32895	1.2209	1.4370

All five factors:
1. Organizational culture
2. KM strategy
3. Leadership and senior manager support
4. Reward and motivation
5. being learning of the organization

Are in a significant level, so their effects on success of KM system exceed the average and get confirmed.

Analysis of the hypothesis 6:

To test the 6th hypothesis test of ANOVA was useable. The hypothesis test is as below:

$H_0 \quad : \quad \mu 1 = \mu 2 = \mu 3 = \mu 4 = \mu 5$

H1: the mean of at least two factors are not the same

ANOVA KManagement					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.858	4	2.214	9.067	.000
Within Groups	91.592	375	.244		
Total	100.450	379			

Post Hoc Tests

Multiple Comparisons							
Dependent Variable:KManagement							
	(I) Factors	(J) Factors	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Leadership	learner_organization	.27632*	.08017	.006	.0566	.4961
		Technology	.47368*	.08017	.000	.2539	.6934
		Culture	.30263*	.08017	.002	.0829	.5224
		O_Size	.22368*	.08017	.044	.0039	.4434
	learner_organization	Leadership	-.27632*	.08017	.006	-.4961	-.0566
		Technology	.19737	.08017	.102	-.0224	.4171
		Culture	.02632	.08017	.997	-.1934	.2461
		O_Size	-.05263	.08017	.965	-.2724	.1671
	Technology	Leadership	-.47368*	.08017	.000	-.6934	-.2539
		learner_organization	-.19737	.08017	.102	-.4171	.0224
		Culture	-.17105	.08017	.208	-.3908	.0487
		O_Size	-.25000*	.08017	.017	-.4698	-.0302
	Culture	Leadership	-.30263*	.08017	.002	-.5224	-.0829
		learner_organization	-.02632	.08017	.997	-.2461	.1934
		Technology	.17105	.08017	.208	-.0487	.3908
		O_Size	-.07895	.08017	.862	-.2987	.1408
	O_Size	Leadership	-.22368*	.08017	.044	-.4434	-.0039
		learner_organization	.05263	.08017	.965	-.1671	.2724
		Technology	.25000*	.08017	.017	.0302	.4698
		Culture	.07895	.08017	.862	-.1408	.2987
LSD	Leadership	learner_organization	.27632*	.08017	.001	.1187	.4340

		Technology	.47368*	.08017	.000	.3160	.6313
		Culture	.30263*	.08017	.000	.1450	.4603
		O_Size	.22368*	.08017	.006	.0660	.3813
	learner_organization	Leadership	-.27632*	.08017	.001	-.4340	-.1187
		Technology	.19737*	.08017	.014	.0397	.3550
		Culture	.02632	.08017	.743	-.1313	.1840
		O_Size	-.05263	.08017	.512	-.2103	.1050
	Technology	Leadership	-.47368*	.08017	.000	-.6313	-.3160
		learner_organization	-.19737*	.08017	.014	-.3550	-.0397
		Culture	-.17105*	.08017	.034	-.3287	-.0134
		O_Size	-.25000*	.08017	.002	-.4076	-.0924
	Culture	Leadership	-.30263*	.08017	.000	-.4603	-.1450
		learner_organization	-.02632	.08017	.743	-.1840	.1313
		Technology	.17105*	.08017	.034	.0134	.3287
		O_Size	-.07895	.08017	.325	-.2366	.0787
	O_Size	Leadership	-.22368*	.08017	.006	-.3813	-.0660
		learner_organization	.05263	.08017	.512	-.1050	.2103
		Technology	.25000*	.08017	.002	.0924	.4076
		Culture	.07895	.08017	.325	-.0787	.2366
*. The mean difference is significant at the 0.05 level.							

Homogeneous Subsets

KManagement					
	Factors	N	Subset for alpha = 0.05		
			1	2	3
Tukey HSD[a]	Technology	76	4.1316		
	Culture	76	4.3026	4.3026	
	learner_organization	76	4.3289	4.3289	
	O_Size	76		4.3816	
	Leadership	76			4.6053
	Sig.		.102	.862	1.000
Means for groups in homogeneous subsets are displayed.					
a. Uses Harmonic Mean Sample Size = 76.000.					

Since the sig. is smaller than 0.05 so the H0 rejects. In other words, there is a meaningful difference between the population means.

9-implementation of AHP technique:

Some complex and demanding computations needed for execution the AHP technique. Thus, the EXPERT CHOICE software is used. The rate of obtained results calculated 0.01. To run the AHP technique, first determine the hierarchical table of important factors and attributes. Table 2 shows the hierarchical table used in this article. In following, for having better paired comparison we applied the last level of calculations. So, after receiving the experts' comments on this section, moves to upper levels after the comparisons. When all paired comparisons performed, our choices that are the effective attributes in human productivity would be prioritized. The number of performed comparsions for achieving the results is:

Number of paired comparison of n factors:

The number of paired comparisons of alternatives (as the ultimate attribute)per n factor are:

Table 2 presents the obtained results of executing AHP technique. According this table, being a learning organization is the most salient factor in implementation of KM system in the organization and places in the first rank. Other factors rank as follows: organizational culture, KM strategy, leadership, reward and motivation respectively. The salient indicators of KM in level 2 of the hierarchy table which are prioritized as, a) use of knowledge, b) acquisition of knowledge, c) creation of knowledge, d) recording of knowledge, e) transfer of knowledge.

Table 1: the hierarchical table of effective factors on success of KM system

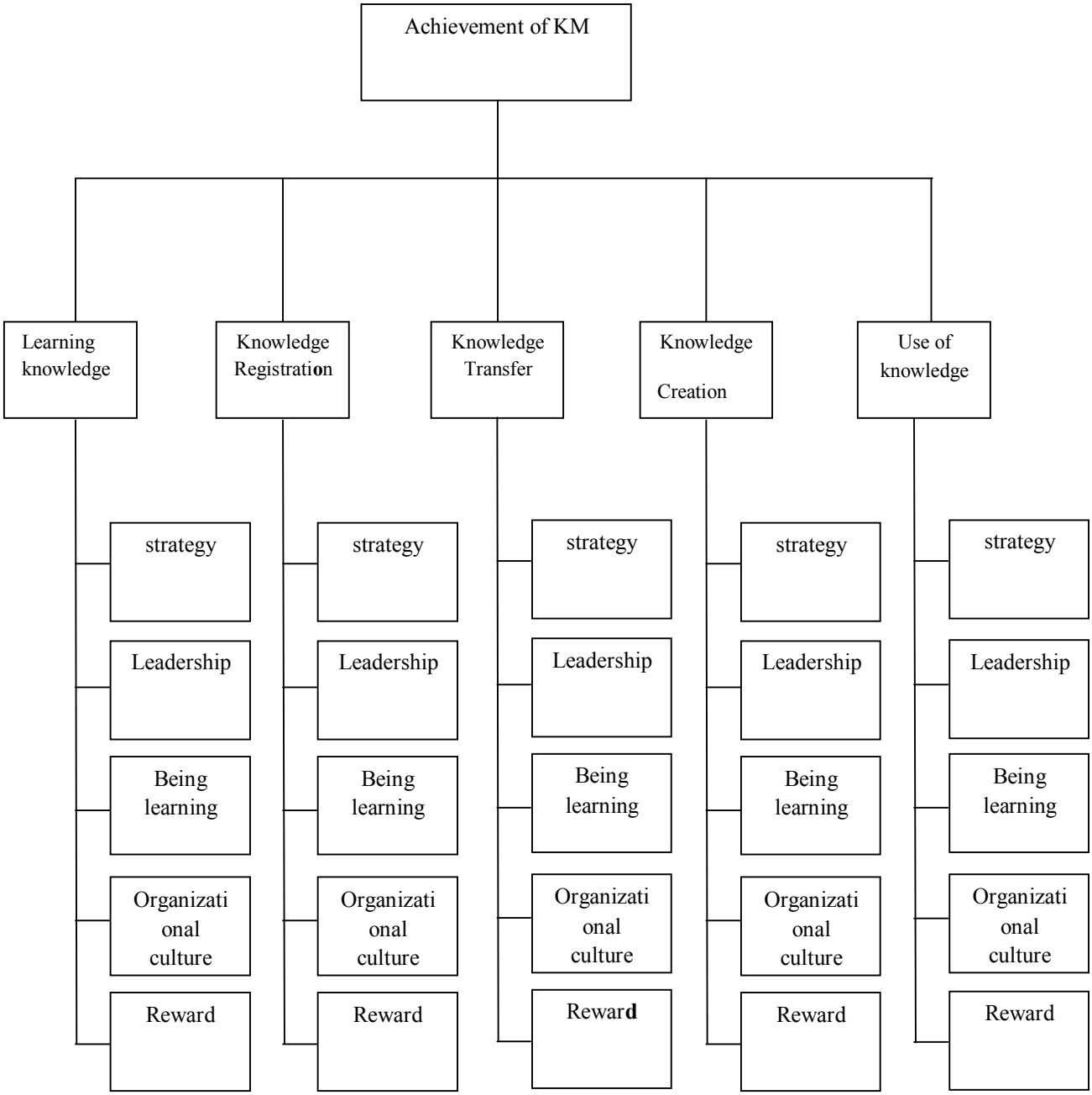

Table 2: calculated weights by AHP technique

rank	Final weight of variables	Final variables	Weight of factors	factors
3	0/231	Strategy of KM	0/474	Application of knowledge
4	0/197	Leadership	0/130	Creation of knowledge
1	0/252	Being learning	0/044	Transfer of knowledge
2	0/240	Organizational culture	0/067	Record of knowledge
5	0/080	Reward and motivation	0/285	Acquisition of knowledge

10-conclusion:

Most of previous studies in field of KM have been centralized more on the concepts and/or model designing and so far no individual research rated the effective factors on it. Accordingly, this study that was designed based on a multi attribute decision making (MADM) model and performed with a cooperation of employees and managers of selected branches of Parsian Bank of Tehran province could guide this organization in achieving a successful KM system. Thus, as it was mentioned the identification of this factors and prioritizing them were carried out according to the employees and managers' comments about this organization.

The obtained results of questionnaires and data analysis:

The findings showed that the presented system in this research for the purpose of identification of effective factors on success of KM system. Also the rating techniques were able to do computations for prioritizing the effective success factors on KM system.

Based on the computations it was observed that the first priority for Parsian Bank was being a learning organization, either individually, in group or organizational. The systematical thinking skills, mental models, individual competences, self-directing learning and dialogue were the vital elements for maximization of the organizational learning.

Learning must pertain to principal business requirements and the expected results for managers, and clients, in this regard it may be said that the organizations' members should acquire the needed knowledge about the demand of KM and understanding its importance as a key resource of the organization. This therefore, may be achieved to through a proper training. By this training the employees can perceive the concept of KM.

The first priority according to the calculations is the organization's culture. The organizational culture is the second necessity for KM success. Culture represents attitudes, values, norms and social manners which dominate on behavior and action in the organization. Generally, a supporting culture of KM is that value the knowledge and knowledge sharing and encourages its creation and application.

The third priority for this organization is the strategy of KM. Doubtless; the strategy of KM is one of key empowerments in implementation and management of knowledge. The strategy of KM causes the firm to clarify the programs and ideals in execution of KM as well as maintenance of cooperation and interactions among individuals.

The needed factors for KM system success including strategy of KM, simple education of these strategies, compliance with user's needs the content of knowledge and standardization of knowledge structure.

The fourth priority for the Parsian Bank was leadership. The effective leaders are the most salient and worthy resource in every organization. To get success or fail in reaching the goals in much extent attributes to leadership and management of the firm. And eventually the fifth priority for the Parsian (Davenport, T., De Long, D. and Beers, M. 1998ian Bank were determined reward and motivation. The following are individuals' motivational needs:

.1Gaining technical competence, 2. Gaining management competence, 3.professional authority, 4. Security, 5. Creativity and enterprounership, 6. Sense of service, 7. Job challenges, 8. The life style, motivation and designing the apt reward system, and the allocation of reward should take the form bring the largest efficiency for the firm.

To take the first step forward, the system need to be designed in a way that giving reward depends on the effective performance (the effective performance is in line with achieving the organizational goals)which only in this condition that the use of reward acts as a encouraging mechanism. Of the most important of these goals are reward, retaining and maintenance of labors, encourage to regular presence in the organization and better performance**.**

Reference

1. Nonaka, I. & H. Takeuchi (1995), The knowledge-creating company, Oxford University Press, Oxford.
2. Nonaka, I. (1991), "The knowledge-creating company", Harvard Business Review, Vol. 64, November-December, pp. 96-104.
3. Pasternack, B. & A. Viscio (1998), The centerless corporation, New York: Simon & Schuster.
4. Dalkir, K. (2005), Knowledge management in theory & practice, Elsevier Butterworth-Heinemann, p.7.
5. Barclag, R. &P.Muray (1997), "What is knowledge Management?", knowledge Praxis, Retrieved may 17,2004, from http://www,media-access.com/whatis.html.
6. Gery, D. (1996), "What is knowledge management", The Knowledge Management Forum, available at http://www.km.froum.org/what_is.htm.
7. Wiig, K. (1993), "Knowledge management foundation: thinking about thinking, how people & organizations create, represent & use knowledge", Arlington, TX: Schema Press.
8. Weick, K. (2001), Making sense of the organization, Malden, MA: Basil Blackwell.

9. Rockart, J. (1979). Chief Executives Define Their Own Information Needs. Harvard Business Review, March - April, pp. 81-92.
10. Bruno, A. and Leidecker, J. (1984). "Identifying and Using Critical Success Factors". In: Long Range Planning,, Vol. 17, No.1, pp. 23-32.
11. Pinto, J. and Slevin, D. (1987). "Critical Factors in Successful Project Implementation". In IEEE Transactions on Engineering Management, Vol.34, No.1, pp. 22-27.
12. Amberg, M., Fichle, F and Wiener, M. (2005). "Background of Critical Success Factor Research", Working paper, Vol. 10, No.5, pp. 1-7.
13. Skyrme, David J. and Amidon, Debra M. (1997). Creating the Knowledge-based Business, London: Business Intelligence.
14. Holsapple, C.W., Joshi, K.D. (2000). "An investigation of factors that influence the management of knowledge in organizations", Journal of Strategic Information Systems, No. 9, pp. 235-61.
15. Davenport, T., De Long, D. and Beers, M. (1998). "Successful Knowledge Management Projects", Sloan Management Review, Vol. 39 No. 2, pp. 43-57.
16. Chourides, P., Longbottom, D., Murphy, W. (2003). "Excellence in knowledge Management: an Empirical Study to Identify Critical Factors and Performance Measures", Measuring Business Excellence", Vol. 7 No.2, pp. 29-45.
17. Hung, Y.C., Huang, S.M Lin, Q. Tsai, M.L (2005). Critical Factors in Adopting a Knowledge Management System for the Pharmaceutical Industry, Vol.105, No.2, pp. 164-168.
18. Chourides, P., Longbottom, D., Murphy, W. (2003). "Excellence in knowledge Management: an Empirical Study to Identify Critical Factors and Performance Measures", Measuring Business Excellence", Vol. 7 No.2, pp. 29-45.
19. Mathi, K. (2004). Key Success Factors for Knowledge Management, Master Thesis, MBA: International Business Management& Consulting, Germany: University of Applied Sciences.
20. Khalifa, M. and Liu, V. (2003). Determinants of Successful Knowledge Management Programs, Electronic Journal on Knowledge Management, Vol. 1, No.2, pp. 103-112.
21. Hung, Y.C., Huang, S.M Lin, Q. Tsai, M.L (2005). Critical Factors in Adopting a Knowledge Management System for the Pharmaceutical Industry, Vol.105, No.2, pp. 164-168.
22. Kuan, Y.W. Critical Success Factors for Implementing Knowledge Management in Small and Medium Enterprises, Industrial management & Data Systems, Vol. 105, No. 3, pp. 262-273.
23. Davenport, T., De Long, D. and Beers, M. (1998). "Successful Knowledge Management Projects", Sloan Management Review, Vol. 39 No. 2, pp. 43-57.
24. Greengard, S. (1998). "Will your culture support KM?" Workforce, Vol. 77 No. 10, pp. 93-114.
25. Cohen, S. and Backer, N. (1999). "Making and mining intellectual capital: method or madness?", Training & Development, Vol. 53 No. 9, pp. 46- 50.
26. Moffett, S., McAdam, R. and Parkinson, S. (2003). "An Empirical Analysis of Knowledge Management Applications", Journal of Knowledge Management, Vol. 23 No. 3, pp. 6-26.
27. Davenport, T., & Grover, V. (2001). "Knowledge management". Journal of Management Information Systems, Vol.18, No.1, pp. 3-4.
28. Yahya, S. & Goh, W. (2002). "Managing human resources towardachieving knowledge management", Journal of Knowledge Management, Vol. 6, No.5, pp. 457-468.
29. Hauschild, S., Licht, T., & Stein, W. (2001). "Creating a knowledge culture. McKinsey Quarterly", No. 1, pp. 74-81.
30. Gibbons, R. (1998). "Incentives in Organizations". Journal of Economic Perspectives, Vol.12, pp. 115-132.
31. Buckman, R. (1999). "Collaborative knowledge, Human Resource Planning", Vol. 22 No. 1, pp. 22-38.
32. Dess, G. and Picken, J. (2000). "Changing roles: Leadership in the 21st century", Organizational Dynamics, Vol. 28 No. 3, pp. 18-34.
33. Davis, T. (1996). "Managing Knowledge-work Support Functions", Journal of General Management, Vol. 22 No. 1, pp. 68-86.
34. Drew, S. (1997). "From knowledge to action: the Impact of Benchmarking on Organizational Performance", Long Range Planning, Vol. 30 No. 3, pp. 427-41.
35. Day, J. and Wendler, J. (1998) "Best Practice and Beyond: Knowledge Strategies", the McKinsey Quarterly, No. 1, pp. 19-25.
36. Tynan, S. (1999). "Best Behaviors, Management Review", Vol. 88, No. 10, pp. 8-61.

37. Wilson, L. and Asay, D. (1999). "Putting quality in Knowledge Management", Quality Progress, Vol. 32, No.1, pp. 25-31.
38. Greco, J. (1999). "Knowledge is Power":, Journal of Business Strategy, Vol. 20, No. 2, pp. 18-22.
39.Savary, M. (1999). "Knowledge Management and Competition in the Consulting Industry", California Management Review, Vol. 41 No. 2, pp. 95-107.
40.Lee, S.M. and Hong, S. (2002). "An Enterprise-wide Knowledge Management System", Industrial Management & Data Systems, Vol. 102, No.1, pp. 17-25.
41.Saaty T L, Multicriteria decision making, The analytic hierarchy process, Pittsburgh, PA: RWS Publications, (1990.(
42.Saaty TL, The analytic hierarchy process, New York: McGraw- Hill, (1980.(
43. Saaty TL, Decision making for leaders, Belmont, California: Life Time Leaning Publications, (1985.(
44.Saaty TL, How to make a decision: the analytic hierarchy process, European Journal of Operational Research, North-Holland 48 (1990) 9-26.
45.F T S Chan, H K Chan, Development of the supplier selection model—a case study in the advanced technology industry, Proceedings of the Institution of Mechanical Engineers, Part B, Engineering Manufacture 218 (2004) 1807–1824.
46.Ma Zhaipu, Zhao Jianhua, Wu Ling, Shi Changcan, Zhang Chunquan, The quantitative research of composite immune indicator for crustacean, Fish & Shellfish Immunology, 28 (2010) 187-192.

3/22/2013