Identifying and Ranking Knowledge Management Factors Using Fuzzy TOPSIS: A Case in Security and Exchange Organization

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ABSTRACT

Current paper with the purpose of ranking knowledge management indices was done in a population includes 217 employees of Iran's security and exchange organization. To measure knowledge management, 6 main criteria consist of Knowledge creation, Knowledge acquisition, Organizational learning, Knowledge sharing, Knowledge storage and Knowledge utilization were considered. The results of applying fuzzy TOPSIS technique show that "Doing work as a team", "continuance learning" and "Applying people who valorize for organizational knowledge" were selected the top criteria of knowledge management in SEO. Meanwhile "New ideas execution", "Old solutions retrieval" and "Employees' acquaintance with internet" were the least important indices.
Among main criteria knowledge sharing was chosen as the most important one.
KEYWORDS: knowledge management, multi criteria decision making (MCDM), fuzzy TOPSIS technique.

1. INTRODUCTION AND PROBLEM STATEMENT

IT revolution, the advent of informative communities and networks, and rapid development of superior technologies, especially in the fields of communications, computer and engineering, have changed the development of global economic schema from 90s. As a result of those changes, knowledge has become as the most important resource; A substitute for the physical and financial ones in global economy (Mehrmanesh et al, 2011).

In a knowledge based economy, organizations' survival dependents on knowledge, and the most successful organizations are those using this intangible property in a better manner and higher speed. Recent studies (Bontis et al, 1999) propose that in contrary to traditional resources such as money, land, machinery equipments and etc. knowledge has become a source for boosting business performance. It can be noticed that the valuable role of knowledge and other intangible factors within this process have been recognized by the market. It must be mentioned that also the ratio of this 'hidden value' has changed recently (Bontis, 1996).

Considering that, while organizations are competing with each other, their present and future success will depend more on management of knowledge rather than physical resources allocation. Therefore, the obligation for leadership of an organization will be to create a proper environment for knowledge management. Indeed, nowadays providing a proper environment to nurture and develop human mind in knowledge-based organizations is the challenge for their managers (Bontis, 1996). Following this concern, the most crucial skill for managers will be the management of knowledge (Quinn, 1992). Unfortunately the knowledge can not be measured with the traditional accounting measurements, whereas it has an intangible nature and therefore the knowledge and all the intangible properties of an organization can be forgotten or neglected by its managers. It has been suggested that only 20 percent of knowledge-based properties are applied in an organization's system by the managers.

2. LITERATURE REVIEW

2.1. Knowledge Management

Knowledge has been considered as an important organizational resource for a long time and its effective management is therefore vital for organizations' success. Knowledge management did not emerge as an academic field until the 1980s, and although practitioners and academics have increasingly recognized the potential benefits of knowledge management an ongoing dispute continues about the meaning of the concept (Taghizadeh and Zeinalzadeh, 2012).

Knowledge has a lot of definitions:

Knowledge is a potentially significant resource of the firm as it may possess valuable, rare, inimitable and non-substitutable characteristics particularly if it has a tacit dimension (Seidler and Hartmann, 2008). Knowledge is considered to be information that has been processed in some meaningful ways (Faucher et al. 2008).

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Knowledge is the result of merging information with practice, perspective and expression, resulting in insinuation and presents approaches and plans on which decision is based on (Karadsheh et al. 2009).

State two concepts for the knowledge: first as an economic resource; second as a source of competitive advantage making significant impact on the traditional management approach and demanded a model change. This in turn created an wealth of intellectual capital, human capital, structural capital, knowledge capital, customer capital, human intellectual assets, intangible assets, knowledge worker, and competent employee, all emphasizing the utilization of a rare and special kind of human resource (Al-Zayyat et al. 2009).

Knowledge management in organizations has been a well-documented activity for at least 15 years and was being carried out for many years before that. Nevertheless, lots of managers, still find knowledge management as somewhat of an uphill struggle, especially when it comes to implementing the plans they have decided upon (Edwards, 2011).
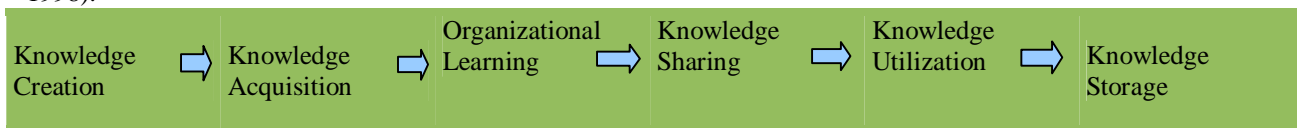
Knowledge management is one of the most important concepts of academic and professional discourse in many fields of knowledge, including cognitive sciences, sociology, management science, information science (IS), knowledge engineering, artificial intelligence, intangible assets, and economics (Kebede, 2010).

In another definition knowledge management is defined as an organizational process that aims to create centralize knowledge source within the organization that acquire, assimilate, distribute, integrate, share, retrieve and reuse the internal and external, explicit and tacit to bring innovation in the organization in the form of the product, people and organizational process (Akram et al, 2011).

There is an increasing attention toward the knowledge management field, both from scientific and business perspective. It can be understood easily, considering the growing numerous publications in this field (Zack, 1999). The studies have been done in Europe propose that in 2000, knowledge management was applied in 80 percent of the biggest companies in the world (KPMG, 2000).

In recent years, the knowledge itself has turned to a key subject in the organizations' competitive capabilities. Also, the idea of 'knowledge being manageable' has taken its place in many knowledge-based businesses, learning organizations and intellectual capital management. Therefore, organizations are looking for new ways to survive in business and stay effectively competitive. One of the ways to achieve effectiveness is to discover and develop features leading to higher efficiency, specially the features which have not been applied appropriately in the past (Ndlela and Du Toit, 2001). To understand knowledge management, it must be considered as an interdisciplinary field of research, which makes it a little complicated and ambiguous, although, its complexity should not become the reason to abandon the issue. While codifying strategies of an organization, the ideas about knowledge management must be considered and applied. The knowledge management process helps the organizations to recognize, select, organize and propagate information and important specialties. These information and specialties are part of the organizational memory and usually are unstructured (Turban and Mclean, 2002). In another way, the knowledge management has been defined as the process of awareness of existing knowledge in the organization, create, share, transfer and employ that knowledge, and finally obtain new knowledge and save and store it for the organization, in which all those actions happen within the learning process of an organization, considering its culture and strategies (Sallis and Jones, 2002).

Structuring the knowledge is what, that helps organizations in problem solving improvement, dynamic learning, strategic programming, and decision making more effectively. The focus of knowledge management is to recognize, explain and organize knowledge and to increase organization's value. This concept (knowledge management) has been used in various fields such as knowledge engineering (De Hoog, 1997) and artificial intelligence (Glazer, 1998).

| Knowledge Creation | ⇨ | Knowledge Acquisition | ⇨ | Organizational Learning | ⇨ | Knowledge Sharing | ⇨ | Knowledge Utilization | ⇨ | Knowledge Storage |

The knowledge Management Process (Salis and Jones, 2002)

Knowledge Creation in an organization means to provide ability of facilitating the creation of a new brand of knowledge and its distribution all over the organization (Nonaka and Takeuchi, 1995).

Knowledge Acquisition includes a group of spiral interactions between tangible and intangible (hidden) knowledge which appears through four stages; 1) Social building, 2) Exterior building, 3) Combination, 4) Interior building (Nonaka and Takeuchi, 1995).

Organizational Learning can be defined as a goal or a state to be achieved. Organizational learning process is a series of interactions between individual and group adaptations in an organizational level (Cangelosi and Dill, 1965).

Knowledge Sharing is known as two functions; 1) Transfer (to transfer knowledge to a potential receiver), 2) Absorption (knowledge absorption by an individual or a group) (Nonaka and Takeuchi; 1995).

Knowledge Utilization consists of activities such as creating new knowledge from old (e.g. to discover the customers interests from analyzing their behavior) and to apply the current knowledge (e.g. finding new customers and current costumers' retention) (Lee and Yang, 2000).

Knowledge Storage is a process; through which all the cases seeming to be valuable enough to be protected, are recognized and stored in the organizational memory form (Sallies and Jones, 2002).

2.3. Conceptual Model of the Research and main question

Considering research literature, the conceptual model below can be chosen for the current study. This model measures the knowledge management dimensions. Within this model, knowledge management has 6 main criteria and 26 sub criteria.
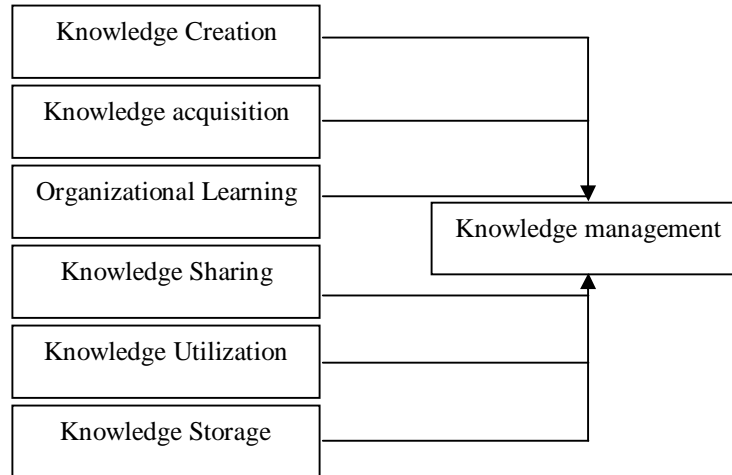
Conceptual framework of research (Nonaka & Takeuchi, 1995)

Based on the research goal and above mentioned model, the main research question is: Which aspects of Knowledge management have the most important role in the selected organization and which factors of knowledge management poses the most influential role in enhancing knowledge management?

3. RESEARCH METHODOLOGY

Samples for this research were chosen from managers of different levels: 217 employees of Security and exchange organization (SEO) in Iran. This number might seem inadequate; however, the sampling was done through an integral counting method. Current study can be considered as a descriptive survey if we observe it from data collection aspect and it would be an applied research if the goals of the study are considered.

To collect the data, library method (refer to books, articles, theses, etc...) and fieldwork (questionnaire) were used. The questionnaire was designed in six parts which distribution of each variable is shown in table 1:

Table 1: Distribution of KM dimension

KM dimensions	Number of questions
Knowledge creation	1-4
Knowledge acquisition	5-8
Organizational learning	9-13
Knowledge sharing	14-18
Knowledge storage	19-22
Knowledge utilization	23-26

To categorize knowledge management indices, Fuzzy TOPSIS technique was applied. Management experts were requested to evaluate the validity of questionnaire. To do this, the questionnaire was given to some university professors and experts in management.

Then, they confirmed the used modifications and the questionnaire were given to the participants. To determine the questionnaire's reliability, the 'Cronbach Alfa technique' was used. For this purpose, 30 people were chosen randomly (from the samples) and the questionnaire was given to them. The 'Cronbach's Alfa' value for the questionnaire as a hole was calculated 0.82. This value supports the reliability of questionnaire, because the calculated result for Cronbach's alpha are more than 0.7.

3.1. Decision making process by fuzzy TOPSIS technique

Decision making process steps by fuzzy TOPSIS technique are shown below (Chen and Hwang, 1981):

Step 1: calculating weights vector w~j

Step 2: normalizing the calculated matrix
$$\tilde{R} = \left[\tilde{r}_{ij}\right]_{m \times n} \tag{1}$$

$B \subseteq \{1, ..., n\}$ is related to benefit-based indices and $C \subseteq \{1, ..., n\}$ is related to cost-based indices.

$$(2) \qquad \tilde{r}_{ij} = \left(\frac{a_j^-}{d_{ij}}, \frac{a_j^-}{c_{ij}}, \frac{a_j^-}{b_{ij}}, \frac{a_j^-}{a_{ij}}\right), \quad j \in C \qquad\qquad (3) \quad \left(\frac{a_{ij}}{d_j^*}, \frac{b_{ij}}{d_j^*}, \frac{c_{ij}}{d_j^*}, \frac{d_{ij}}{d_j^*}\right), \quad j \in B$$

Step 3: so normalized weighted matrix is calculated as formula 4:

$$(4) \qquad \tilde{v}_{ij} = \tilde{r}_{ij} \otimes \tilde{w}_j \qquad\qquad \tilde{V} = \left[\tilde{v}_{ij}\right]_{m \times n}, \quad i = 1, 2, \ldots, m, \quad j = 1, 2, \ldots, n$$

Step 4: determining the fuzzy positive ideal solution $\tilde{v}_j^*$ (FPIS) and fuzzy negative ideal solution $\tilde{v}_j^-$ (FNIS) (formulas 5, 6):

$$\tilde{v}_j^- = \begin{cases} \min_{i=1,...,m} \tilde{v}_{ij}; \ j \in B \\ \max_{i=1,...,m} \tilde{v}_{ij}; \ j \in C \end{cases} \tag{5}$$

$$\tilde{v}_j^* = \begin{cases} \max_{i=1,...,m} \tilde{v}_{ij}; \ j \in B \\ \min_{i=1,...,m} \tilde{v}_{ij}; \ j \in C \end{cases} \tag{6}$$

$$FNIS = \{\tilde{v}_j^- \mid j = 1, ..., n\} \qquad FPIS = \{\tilde{v}_j^* \mid j = 1, ..., n\}$$

Step 5: calculating the alternatives from positive and negative ideal by applying formulas 8,9:

$$d_i^* = \sum_{j=1}^{n} d(\tilde{v}_{ij}, \tilde{v}_j^*), \ i = 1, ..., m \tag{7}$$

$$(8) \qquad d_i^- = \sum_{j=1}^{n} d(\tilde{v}_{ij}, \tilde{v}_j^-), \ i = 1, ..., m$$

Step 6: Calculating the relative closeness to the ideal solution:
$$Cc_i = \frac{d_i^-}{d_i^- + d_i^+} \tag{9}$$

In real-word situation, because of incomplete or non-obtainable information, the data (attributes) are often not so deterministic, there for they usually are fuzzy /imprecise. So, we try to extend TOPSIS for fuzzy data to categorize the driving factors affecting on Iran carpet industry compatibility. Linguistic variables for the important weight of each criteria are shown in table 2:

Table 2: Linguistic variables for the importance weight (Chen, 2000)

Very Low	VL	(0, 0, 1, 2)
Low	L	(1, 2, 2, 3)
Medium Low	ML	(2, 3, 4, 5)
Medium	M	(4, 5, 5, 6)
Medium High	MH	(5, 6, 7, 8)
High	H	(7, 8, 8, 9)
Very High	VH	(8, 9, 10, 10)

4. Data analysis

After distributing questionnaire among statistical society people and gathering data, decision making matrix with fuzzy weights was calculated by utilizing formula 1. Table 3 shows the results of calculation.

Table 3: Decision making matrix and fuzzy weights

variables	8	9	10	10	5	6	7	8	7	8	8	9	4	5	5	6	7	8	8	9	5	6	7	8
	K creation				K acquisition				OL				K sharing				K utilizing				K storage			
P1	5	6	7	8	1	2	2	3	4	5	5	6	8	9	10	10	7	8	8	9	4	5	5	6
P2	2	3	4	5	2	3	4	5	8	9	10	10	5	6	7	8	4	5	5	6	1	2	2	3
P3	5	6	7	8	8	9	10	10	7	8	8	9	2	3	4	5	2	3	4	5	7	8	8	9
P4	4	5	5	6	5	6	7	8	5	6	7	8	5	6	7	8	8	9	10	10	8	9	10	10
P5	2	3	4	5	8	9	10	10	2	3	4	5	4	5	5	6	5	6	7	8	2	3	4	5
P6	7	8	8	9	5	6	7	8	2	3	4	5	2	3	4	5	2	3	4	5	5	6	7	8
P7	7	8	8	9	4	5	5	6	7	8	8	9	8	9	10	10	2	3	4	5	5	6	7	8
P8	7	8	8	9	4	5	5	6	4	5	5	6	8	9	10	10	5	6	7	8	4	5	5	6
P9	2	3	4	5	8	9	10	10	2	3	4	5	8	9	10	10	8	9	10	10	8	9	10	10
P10	7	8	8	9	4	5	5	6	8	9	10	10	5	6	7	8	5	6	7	8	7	8	8	9
P11	7	8	8	9	5	6	7	8	8	9	10	10	2	3	4	5	4	5	5	6	7	8	8	9
P12	5	6	7	8	0	0	1	2	4	5	5	6	8	9	10	10	8	9	10	10	2	3	4	5
P13	5	6	7	8	7	8	8	9	2	3	4	5	5	6	7	8	7	8	8	9	7	8	8	9
P14	4	5	5	6	8	9	10	10	8	9	10	10	2	3	4	5	4	5	5	6	7	8	8	9
P15	8	9	10	10	4	5	5	6	5	6	7	8	2	3	4	5	2	3	4	5	8	9	10	10
P16	7	8	8	9	7	8	8	9	2	3	4	5	8	9	10	10	8	9	10	10	4	5	5	6
P17	7	8	8	9	5	6	7	8	4	5	5	6	5	6	7	8	4	5	5	6	2	3	4	5
P18	5	6	7	8	7	8	8	9	8	9	10	10	2	3	4	5	8	9	10	10	8	9	10	10
19	2	3	4	5	4	5	5	6	5	6	7	8	4	5	5	6	7	8	8	9	5	6	7	8
P20	4	5	5	6	8	9	10	10	2	3	4	5	8	9	10	10	7	8	8	9	8	9	10	10
P21	8	9	10	10	7	8	8	9	2	3	4	5	5	6	7	8	1	2	2	3	7	8	8	9
P22	5	6	7	8	8	9	10	10	1	2	2	3	2	3	4	5	8	9	10	10	5	6	7	8
P23	5	6	7	8	5	6	7	8	4	5	5	6	4	5	5	6	7	8	8	9	7	8	8	9
P24	2	3	4	5	8	9	10	10	4	5	5	6	7	8	8	9	4	5	5	6	4	5	5	6
P25	2	3	4	5	4	5	5	6	5	6	7	8	5	6	7	8	2	3	4	5	5	3	7	8
P26	5	6	7	8	5	6	7	8	7	8	8	9	4	5	5	6	5	6	7	8	4	5	5	5

Also fuzzy weighted normalized matrix was calculated by applying formula 2, 3 and 4.
It is necessary to mention because of extra volume of calculation, weighted normalized matrix was ignored.

Table 4: Fuzzy weighted normalized matrix

Variables	K creation				K acquisition				OL			
P1	0.4	0.54	0.7	0.8	0.25	0.36	0.49	0.64	0.28	0.4	0.4	0.54
P2	0.16	0.27	0.4	0.5	0.1	0.18	0.28	0.4	0.56	0.72	0.8	0.9
P3	0.4	0.54	0.7	0.8	0.4	0.54	0.7	0.8	0.49	0.64	0.64	0.81
P4	0.32	0.45	0.5	0.6	0.25	0.36	0.49	0.64	0.35	0.48	0.56	0.72
P5	0.16	0.27	0.4	0.5	0.4	0.54	0.7	0.8	0.14	0.24	0.32	0.45
P6	0.56	0.72	0.8	0.9	0.25	0.36	0.49	0.64	0.14	0.24	0.32	0.45
P7	0.56	0.72	0.8	0.9	0.2	0.3	0.35	0.48	0.49	0.64	0.64	0.81
P8	0.56	0.72	0.8	0.9	0.2	0.3	0.35	0.48	0.28	0.4	0.4	0.54
P9	0.16	0.27	0.4	0.5	0.4	0.54	0.7	0.8	0.14	0.24	0.32	0.45
P10	0.56	0.72	0.8	0.9	0.2	0.3	0.35	0.48	0.56	0.72	0.8	0.9
P11	0.56	0.72	0.8	0.9	0.25	0.36	0.49	0.64	0.56	0.72	0.8	0.9
P12	0.4	0.54	0.7	0.8	0	0	0.07	0.16	0.28	0.4	0.4	0.54
P13	0.4	0.54	0.7	0.8	0.35	0.48	0.56	0.72	0.14	0.24	0.32	0.45
P14	0.32	0.45	0.5	0.6	0.4	0.54	0.7	0.8	0.56	0.72	0.8	0.9
P15	0.64	0.81	1	1	0.2	0.3	0.35	0.48	0.35	0.48	0.56	0.72

Variables												
P16	0.56	0.72	0.8	0.9	0.35	0.48	0.56	0.72	0.14	0.24	0.32	0.45
P17	0.56	0.72	0.8	0.9	0.25	0.36	0.49	0.64	0.28	0.4	0.4	0.54
P18	0.4	0.54	0.7	0.8	0.35	0.48	0.56	0.72	0.56	0.72	0.8	0.9
19	0.16	0.27	0.4	0.5	0.2	0.3	0.35	0.48	0.35	0.48	0.56	0.72
P20	0.32	0.45	0.5	0.6	0.4	0.54	0.7	0.8	0.14	0.24	0.32	0.45
P21	0.64	0.81	1	1	0.35	0.48	0.56	0.72	0.14	0.24	0.32	0.45
P22	0.4	0.54	0.7	0.8	0.4	0.54	0.7	0.8	0.07	0.16	0.16	0.27
P23	0.4	0.54	0.7	0.8	0.25	0.36	0.49	0.64	0.28	0.4	0.4	0.54
P24	0.16	0.27	0.4	0.5	0.4	0.54	0.7	0.8	0.28	0.4	0.4	0.54
P25	0.16	0.27	0.4	0.5	0.2	0.3	0.35	0.48	0.35	0.48	0.56	0.72
P26	0.4	0.54	0.7	0.8	0.25	0.36	0.49	0.64	0.49	0.64	0.64	0.81

Continue of Table 4: Fuzzy weighted normalized matrix

Variables	K creation				K acquisition				OL			
P1	0.32	0.45	0.5	0.6	0.49	0.64	0.64	0.81	0.2	0.3	0.35	0.48
P2	0.2	0.3	0.35	0.48	0.28	0.4	0.4	0.54	0.05	0.12	0.14	0.24
P3	0.08	0.15	0.2	0.3	0.14	0.24	0.32	0.45	0.35	0.48	0.56	0.72
P4	0.2	0.3	0.35	0.48	0.56	0.72	0.8	0.9	0.4	0.54	0.7	0.8
P5	0.16	0.25	0.25	0.36	0.35	0.48	0.56	0.72	0.1	0.18	0.28	0.4
P6	0.08	0.15	0.2	0.3	0.14	0.24	0.32	0.45	0.25	0.36	0.49	0.64
P7	0.32	0.45	0.5	0.6	0.14	0.24	0.32	0.45	0.25	0.36	0.49	0.64
P8	0.32	0.45	0.5	0.6	0.35	0.48	0.56	0.72	0.2	0.3	0.35	0.48
P9	0.32	0.45	0.5	0.6	0.56	0.72	0.8	0.9	0.4	0.54	0.7	0.8
P10	0.2	0.3	0.35	0.48	0.35	0.48	0.56	0.72	0.35	0.48	0.56	0.72
P11	0.08	0.15	0.2	0.3	0.28	0.4	0.4	0.54	0.35	0.48	0.56	0.72
P12	0.32	0.45	0.5	0.6	0.56	0.72	0.8	0.9	0.1	0.18	0.28	0.4
P13	0.2	0.3	0.35	0.48	0.49	0.64	0.64	0.81	0.35	0.48	0.56	0.72
P14	0.08	0.15	0.2	0.3	0.28	0.4	0.4	0.54	0.35	0.48	0.56	0.72
P15	0.08	0.15	0.2	0.3	0.14	0.24	0.32	0.45	0.4	0.54	0.7	0.8
P16	0.32	0.45	0.5	0.6	0.56	0.72	0.8	0.9	0.2	0.3	0.35	0.48
P17	0.2	0.3	0.35	0.48	0.28	0.4	0.4	0.54	0.1	0.18	0.28	0.4
P18	0.08	0.15	0.2	0.3	0.56	0.72	0.8	0.9	0.4	0.54	0.7	0.8
19	0.16	0.25	0.25	0.36	0.49	0.64	0.64	0.81	0.25	0.36	0.49	0.64
P20	0.32	0.45	0.5	0.6	0.49	0.64	0.64	0.81	0.4	0.54	0.7	0.8
P21	0.2	0.3	0.35	0.48	0.07	0.16	0.16	0.27	0.35	0.48	0.56	0.72
P22	0.08	0.15	0.2	0.3	0.56	0.72	0.8	0.9	0.25	0.36	0.49	0.64
P23	0.16	0.25	0.25	0.36	0.49	0.64	0.64	0.81	0.35	0.48	0.56	0.72
P24	0.28	0.4	0.4	0.54	0.28	0.4	0.4	0.54	0.2	0.3	0.35	0.48
P25	0.2	0.3	0.35	0.48	0.14	0.24	0.32	0.45	0.25	0.18	0.49	0.64
P26	0.16	0.25	0.25	0.36	0.35	0.48	0.56	0.72	0.2	0.3	0.35	0.4

Finally by applying formulas 7, 8 and 9, fuzzy positive ideal solution, negative ideal solution and the relative closeness to the ideal solution were determined which are shown in table 5:

Table 5: Fuzzy positive and negative ideal solution, relative closeness to the ideal solution and final indices ranks

Variables	D_i^+	D_i^-	Cc_i	Final rank
Employees' mistake acceptance	3.194032	2.983461	0.482956595	11
New ideas execution	3.874095	2.292978	0.371809786	26
People's self confidence	3.244279	2.965131	0.477522221	13
Applying people who valorize for organizational knowledge	2.994199	3.212844	0.517612665	3
Employees' acquaintance with internet	3.827836	2.368314	0.382223426	24
Employees' scientific experience and knowledge level promotion	3.715052	2.490265	0.401311473	23
Employees' studying	3.178344	3.003707	0.485875498	10
Job identity	3.269064	2.888073	0.469061077	14
New knowledge creation	3.064577	3.1568	0.507411831	6
Continuance learning	2.899892	3.29407	0.531819567	2
Building team works	3.065574	3.128285	0.505062368	7
Relationship with stakeholders	3.55961	2.62998	0.424903775	21
Attending to employees' educational needs	3.170275	3.028732	0.488583414	9
Opportunities for exchange of views	3.15914	3.021283	0.488847294	8
Interesting to responsibility	3.33145	2.904369	0.465755743	15
Discussion meetings	2.997109	3.189673	0.515562491	4
Guiding newcomers	3.514684	2.657133	0.430526835	19
Doing work as a team	2.717629	3.511823	0.563745055	1
Managers relocation	3.55049	2.626551	0.425211823	20
Documenting employees' experience and knowledge	3.015644	3.178058	0.51311128	5
Results documentation	3.420376	2.800097	0.450142126	18
Useful informational resources access	3.364242	2.850574	0.458673907	17
Need to updated knowledge	3.216506	2.966689	0.479798765	12
Non-resistance against new knowledge utilization	3.579919	2.578803	0.418723726	22
Old solutions retrieval	3.879866	2.336244	0.375836975	25
Previous projects experience	3.305892	2.872489	0.464925856	16

As table 5 shows, "Doing work as a team", "continuance learning" and "Applying people who valorize for organizational knowledge" were chosen as the top criteria of knowledge management in SEO. Also "New ideas execution", "Old solutions retrieval" and "Employees' acquaintance with internet" were the least important indices.

Table 6: final ranks of KM main criteria

KM dimensions	scores	Ranks
Knowledge creation	1.849901	3
Knowledge acquisition	0.507412	6
Organizational learning	1.950369	2
Knowledge sharing	2.464437	1
Knowledge storage	1.847139	4
Knowledge utilization	1.739285	5

Also as table 6 shows among main criteria, knowledge sharing was selected as the top criteria and knowledge acquisition was placed in the last level.

5. Conclusion and suggestions

The purpose of writing this paper is to prioritize knowledge management indices with fuzzy TOPSIS technique which was done is a population includes 217 employees of Security and Exchange Organization.

For measuring knowledge management dimensions, 6 main criteria were considered as: Knowledge creation, Knowledge acquisition, Organizational learning, Knowledge sharing, Knowledge storage and Knowledge utilization.

After designing a questionnaire and proving its validity and reliability, 26 indices of knowledge management were ranked in which "Doing work as a team", "continuance learning" and "Applying people who valorize for organizational knowledge" were selected as the most important sub criteria.

Also "New ideas execution", "Old solutions retrieval" and "Employees' acquaintance with internet" were chosen as the least important indices in knowledge management.

Because "doing work as team" was the most affective driver in Security and Exchange Organization, so the managers are advised to create work teams, delegate and empower them to make them more motivated. Involving employees in decision making and making them more participated improve organizational performance and facilitate organizational procedures.

"Continues learning" was placed in second place. So some suggestions like holding high-quality educational courses, job training courses and allocating some times for employees' study are among the ways lead to enhanced knowledge management in organization. Besides, a more open culture and management support increase organizational learning.

The third criterion is "Applying people who valorize for organizational knowledge". Employing educated people and some ones who have productive record about researches and examining new employees with knowledge-based tests are some solution to make Security and Exchange Organization more productive and competitive.

Finally as knowledge management is a vital key to gain competitive advantage in today complex world, its implementation in all organization around the world is really important. So the suggestion of the paper to managers is to try to execute knowledge-based plans and effectively implement knowledge management in all dimensions in their organizations.

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