

A Behavioral Maturity Model to Establish Knowledge Management in an Organization

Camellia Salehi Fashami

Department of Information Technology Management
College of Management and Economics
Science and Research Branch, Islamic Azad University
Tehran, Iran

Mohammadreza Babaei

Department of Industrial Management
College of Management and Accounting
Yadegar-e-Imam Khomeini (RAH) ShahreRey Branch
Islamic Azad University
Tehran, Iran

Abstract—Modern organizations need intangible assets such as organizational knowledge and human resources to gain competitive advantage in the market. Organizations can provide opportunities for behavioral maturity of managers to establish knowledge management. This study tries to develop a behavioral maturity model for managements to examine effectiveness of knowledge management. The study is conducted in Iran Insurance Company as an empirical case study. Twenty academic and organizational experts are selected for the study. Employees and managers of Iran Insurance Company are used to measure and test conceptual model (behavioral maturity of managers to establish knowledge management). Both interview and questionnaire tools are used to collect data. Fuzzy AHP and PLS methods are used to analyze the collected data. Fuzzy AHP results show that transformational leadership, human and social skills, knowledge orientation, emotional intelligence, trustful climate are identified as highly effective priorities.

Keywords—behavioral maturity model; knowledge management; managers; organization

I. INTRODUCTION

Knowledge organization is considered one of the organizational capitals. Organizational knowledge means choosing the right science in the appropriate time and conditions [1]. In fact, information and knowledge management has become a strong position to survive in dynamic and innovative organizations; even market and business competitiveness requires acquisition, development and updating of individual and organizational knowledge to the extent that knowledge is considered as an essential part of organizational capitals [2]. Hence, intelligent management is to use knowledge to face and deal with uncertainty factors, maintain opportunities and innovate to expand competition [3]. This requires organizations to value and prioritize knowledge management and related steps as an essential requirement for pioneering in the competition [4]. Organizations with a high degree of creativity and work performance manage their knowledge more effectively [5]. In current business environment which is characterized by market globalization, increased competition and high rate of technological changes, tangible assets (such as capital, land, raw materials, etc.) do not

create sustainable competitive advantages for the organization. Recognition of knowledge management as the spirit of organizational actions is essential for its implementation [6]. Despite strong reasons for strategic use of knowledge management to improve organizational performance, there are various obstacles in implementing knowledge management in organizations [7]. These obstacles can be summarized as: 1) unfamiliarity of managers with knowledge management (senior and middle managers are not fully familiar with knowledge management and do not understand its advantages for the organization); 2) employees consider knowledge as a source of power (employees do not tend to share their knowledge) [7].

Currently, managers realize that machinery, equipment and buildings are not the most important organizational assets and that a proper management of organizational knowledge lead to a competitive advantage for the organization [8]. Following significance of knowledge assets, organizations are increasingly required to manage their knowledge assets. Organizations need to share organizational knowledge between different sectors to accelerate individual and organizational performance [9]. It seems essential that leadership establish knowledge in the organization properly. Considering the essential role of knowledge management, numerous methods have been presented for deployment of knowledge management in the organization; this confuses managers who tend to implement knowledge management. The purpose of this study is to develop a behavioral maturity model of managers for effectiveness of knowledge management establishment in Iran Insurance Company.

II. LITERATURE REVIEW

In [10], authors identified the effective factors on establishment of knowledge management systems in Taiwanese SMEs. They used LISREL to analyze the data gathered. Factor analysis model showed that structural (organizational), infrastructural and human factors were very important and effective in establishing knowledge management systems. In [11], authors developed a model for effective factors on establishment of knowledge management. Their findings showed that employee participation and organizational

factors including culture had the highest effect on successful establishment of knowledge management. In [12], authors experimentally evaluated knowledge sharing, knowledge leakage and innovative performance. Their results indicated that knowledge sharing positively influenced innovative performance; however, high rate of knowledge leakage negatively moderated the relationship between knowledge sharing and innovative performance. In [13], authors examined the role of knowledge-based leadership on actions of knowledge management and innovation. They found that actions of knowledge management mediated the relationship between knowledge-based leadership and innovative performance. Moreover, they found that actions of knowledge management were effective on innovative performance. In [14], authors addressed the barriers and solutions of knowledge management establishment in Iranian public organizations. They noted that intellectual assets and knowledge are as important as other physical and financial assets. They considered human, technological and structural barriers as important barriers to establishment of knowledge management. Moreover, their solutions included the increased leadership support, promoted learning and restructure of organizations. In [15], authors studied the infrastructures required for establishing knowledge management in universities. As they noted, knowledge management was considered as a strategic need of education and higher education institutions in the third millennium. In [16] the effect of knowledge management establishment on organizational excellence was determined. It was noted that proper knowledge management leads to competitive advantage and ultimately organizational excellence. The study was conducted in Payam Nour University of West Azarbaijan using descriptive-survey approach. Considering the great responsibility of Payam Nour University, it has established knowledge management in the organizational structure through a knowledge network including top and middle management, executives and employees. Collaboration, learning culture and knowledge sharing has improved capabilities of employees; it is suggested to repeat this study in other organizations. In [17], authors concluded that knowledge management directly influenced organizational innovation in manufacturing firms. In [18], authors analyzed the effect knowledge management project and EFQM for improving the key results of the business. In [19], authors defined a model to properly evaluate knowledge management value.

III. RESEARCH METHODOLOGY

The participants in this study included 20 experts in knowledge management establishment and organizational behavior as well as 800 employees of Iran Insurance Company. Twenty experts were used to identify effective factors on the role of behavioral maturity model in establishing knowledge management in the Iran Insurance Company. A series of criteria were determined for inclusion of experts; these criteria included practical and working experience, major and important positions in the company, enough experience in establishing knowledge management, and at least a bachelor's degree. Based on Cochran's formula, at least 260 questionnaires should be handed out, however, in an effort to

increase the validity of the study, a total of 280 questionnaires were distributed.

A. Fuzzy Analytic Hierarchy Process (AHP)

Triangular fuzzy numbers are used to avoid ambiguity caused by uncertainty in decision-making. Table I shows pairwise comparisons in AHP. A triangular fuzzy number denoted by $\tilde{A}=(l,m,u)$ has the following membership function. Figure 1 shows the membership function selected for fuzzy numbers. Two indexes are used for triangular fuzzy numbers: confidence and optimism. Confidence index (α) indicates confidence of the decision maker in his prioritization and judgement. By defining α , triangular fuzzy number is defined as follows:

$$\mu_F(x) = \begin{cases} 0, & x < l \\ \frac{x-l}{m-l}, & l \leq x \leq m \\ \frac{u-x}{u-m}, & m \leq x \leq u \\ 0, & x > u \end{cases} \quad (1)$$

$$\forall \alpha \in [0,1] \quad M_\alpha = [l^\alpha, u^\alpha] = [(m-l)\alpha + l, -(u-m)\alpha + u] \quad (2)$$

Optimism index (μ) can be used to estimate success rate. Optimism index as shown in the formula (3) is a linear convex combination.

$$a_{ij}^{-\alpha} = \mu a_{iju}^\alpha + (1-\mu)a_{iju}^\alpha, \quad \forall \mu \in [0,1] \quad (3)$$

Accordingly, the following matrix can be formed from pairwise comparisons.

$$\tilde{A} = \begin{bmatrix} 1 & \tilde{a}_{12}^\alpha & \dots & \dots & \tilde{a}_{1n}^\alpha \\ \tilde{a}_{21}^\alpha & 1 & \dots & \dots & \tilde{a}_{2n}^\alpha \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ \tilde{a}_{n1}^\alpha & \tilde{a}_{n2}^\alpha & \dots & \dots & 1 \end{bmatrix} \quad (4)$$

By completing pairwise comparisons, weight vector of indexes is calculated by using the following formula where λ_{max} is the largest eigenvalue of the matrix:

$$Aw = \lambda_{max} w \quad (5)$$

Once all matrices of pairwise comparisons are formed, consistency rate (CR) is calculated for each matrix using the following formula:

$$CR = \frac{CI}{RI} \quad (6)$$

CI indicates deviation from consistency and is calculated by:

$$CI = \frac{\lambda_{max} - n}{n - 1} \quad (7)$$

where, n denotes the size of pairwise comparisons matrix and RI represents random consistency index or average weights produced randomly, which can be extracted from the relevant Table 1. CR<0.01 indicates acceptable comparisons; otherwise,

comparisons should be repeated with more accurate information by more experienced people.

IV. MEASUREMENT MODEL EVALUATION

Convergent validity and discriminant validity are used to evaluate reliability of the measurement model using confirmatory factor analysis (CFA) and average variance extracted (AVE). CFA is in fact an extension of ordinary factor analysis and an important aspect of structural equations in which certain hypotheses are tested on the structure of factor loadings. According to [20], factor loadings which are larger than 0.5 are acceptably valid. Moreover, AVE ≥ 0.5 is acceptable. As shown in Table I, all factor loadings are at least 0.5; thus, convergent validity of data is fully confirmed. Moreover, t-values listed in the left column indicate effectiveness of this variable for its corresponding construct. T-values ≥ 1.96 indicate that the variable is effective for the considered construct at 95% confidence interval; otherwise, the variable is not effective. Obviously, t-values are > 1.96 for all variables, indicating their effectiveness on the corresponding construct. Therefore, convergent validity of the constructs is confirmed. Moreover, composite reliability and Cronbach's alpha obtained for all constructs indicate acceptable internal consistency of the measurement models.

V. FINDING AND RESULTS

Following criteria were extracted for the evaluation of behavioral maturity (Table II). These criteria were confirmed by experts and professors for their effect on behavioral maturity of managers for establishment of knowledge management. The second questionnaire developed as a matrix of these variables was distributed among experts.

A. Prioritization of Criteria Using Fuzzy AHP

Since 20 experts were used in this study, there are 20 different matrixes for comparison of criteria. Fuzzy AHP initially converts these matrixes to a single matrix. Let \tilde{a}_{ij}^k be the element related to the k-th respondent for comparison of the criterion i with criterion j; geometric mean for corresponding elements is calculated by:

$$\tilde{a}_{ij} = \left(\prod_{k=1}^n \tilde{a}_{ij}^k \right)^{\frac{1}{n}}$$

$$\tilde{a}_{ij} = (\tilde{a}_{ij}^1 \otimes \tilde{a}_{ij}^2 \otimes \dots \otimes \tilde{a}_{ij}^n)^{\frac{1}{n}}$$

$$\tilde{a}_{12} = ((1,2,3) \otimes (1,1,1) \otimes (1,67,0,2,0,25) \otimes (4,5,6) \otimes (2,3,4) \otimes (0,2,0,33,0,5) \otimes (6,7,8) \otimes (2,3,4) \otimes (1,2,3) \otimes (2,3,4))^{\frac{1}{20}} = (1,23,1,73,2,26)$$

B. Calculation of Fuzzy Weights for Behavioral Maturity Criteria

Considering fuzzy AHP, information of the integrated matrix of criteria is analyzed as follows. First, geometric mean of value of the j-th criterion is determined to other criteria:

$$\tilde{r}_i = (\tilde{a}_{i1} \otimes \tilde{a}_{i2} \otimes \tilde{a}_{i3} \otimes \tilde{a}_{i4} \otimes \tilde{a}_{i5} \otimes \tilde{a}_{i6} \otimes \tilde{a}_{i7} \otimes \tilde{a}_{i8} \otimes \tilde{a}_{i9} \otimes \tilde{a}_{i10} \otimes \tilde{a}_{i11} \otimes \tilde{a}_{i12} \otimes \tilde{a}_{i13})^{\frac{1}{13}} \quad (9)$$

For example, value of the first criterion is calculated as follows:

TABLE I. FACTOR LOADINGS OF THE OBSERVED VARIABLES

Constructs	Item	Factor loading	t-statistic	AVE	CR	Cronbach's α
Personnel empowerment	2	0.862	26.348	0.665	0.855	0.747
	3	0.833	17.926			
	1	0.749	13.226			
Training courses for managers	4	0.905	40.111	0.813	0.929	0.885
	6	0.904	32.683			
	5	0.897	40.228			
Teamwork spirit	8	0.869	22.148	0.754	0.902	0.838
	7	0.876	31.277			
	9	0.861	22.938			
Decision-making power	10	0.931	70.387	0.773	0.902	0.838
	12	0.887	36.741			
	11	0.816	17.972			
Human and social skills	15	0.929	64.505	0.822	0.932	0.892
	14	901	55.742			
	13	0.884	31.577			
Trustful climate	17	0.898	47.325	0.729	0.889	0.813
	18	0.857	26.824			
	16	0.804	12.578			
Professional commitment and responsibility	21	0.871	13.004	0.633	0.837	0.714
	20	0.798	8.814			
	19	0.711	10.524			
Knowledge orientation and organizational knowledge	22	0.897	28.144	0.775	0.912	0.856
	23	0.879	29.775			
	24	0.867	28.803			
Quantitative management	26	0.948	85.920	0.820	0.932	0.890
	27	0.885	27.977			
	25	0.884	28.201			
Supportive behavior	29	0.898	25.511	0.770	0.909	0.851
	30	0.872	22.505			
	28	0.863	27.600			
Transformational leadership	31	0.867	15.689	0.737	0.893	0.824
	32	0.855	21.862			
	33	0.854	25.956			
Emotional Intelligence	34	0.890	26.452	0.740	0.895	0.825
	36	866	30.496			
	35	0.825	18.827			
Motivation	38	0.840	14.796	0.571	0.798	0.814
	37	0.760	7.659			
	39	0.657	6.128			

TABLE II. EFFECTIVE CRITERIA ON BEHAVIORAL MATURITY OF MANAGERS EXTRACTED FROM LITERATURE AND INTERVIEWS

Criteria	Symbol
Transformational leadership	C1
Emotional intelligence of managers	C2
Training courses for managers	C3
Knowledge orientation and organizational knowledge	C4
Quantitative management	C5
Supportive behavior	C6
Personnel empowerment	C7
Trustful climate	C8
Teamwork spirit	C9
human and social skills	C10
Decision-making power	C11
Stimulating and motivating people in the organization	C12
Professional commitment and responsibility	C13

$$\tilde{r}_1 = \left((1,1,1) \otimes (1,23,1,73,2,26) \otimes (2,08,2,59,3,14) \otimes (1,23,1,66,2,08) \otimes (2,26,2,94,3,56) \right. \\ \left. (3,65,4,47,5,81) \otimes (2,81,3,44,4,09) \otimes (1,89,2,51,3,2) \otimes (3,23,4,37,5,37) \otimes \right. \\ \left. (1,15,1,58,2,05) \otimes (4,44,5,43,6,35) \otimes (5,85,6,69,7,47) \otimes (3,23,4,36,5,4) \right) = (2,272,2,876,3,456) \quad (10)$$

where, the triangular fuzzy number (1.23, 1.73, 2.26) is fuzzy value of the first criterion versus the second criterion and the triangular fuzzy number (2.2727, 2.876, 3.456) is fuzzy value of the first criterion versus the other twelve criteria (Table III).

Then, fuzzy weights of criteria are determined as follows:

$$\tilde{w}_i = \tilde{r}_i \otimes (\tilde{r}_1 \oplus \tilde{r}_2 \oplus \tilde{r}_3 \oplus \tilde{r}_4 \oplus \tilde{r}_5 \oplus \tilde{r}_6 \oplus \tilde{r}_7 \oplus \tilde{r}_8 \oplus \tilde{r}_9 \oplus \tilde{r}_{10} \oplus \tilde{r}_{11} \oplus \tilde{r}_{12} \oplus \tilde{r}_{13})^{-1} \quad (11)$$

Value of each criterion is multiplied by the inverse fuzzy sum of values. For example, fuzzy weight of the first criterion is determined as follows:

$$\tilde{w}_1 = \tilde{r}_1 \otimes (\tilde{r}_1 \oplus \tilde{r}_2 \oplus \tilde{r}_3 \oplus \tilde{r}_4 \oplus \tilde{r}_5 \oplus \tilde{r}_6 \oplus \tilde{r}_7 \oplus \tilde{r}_8 \oplus \tilde{r}_9 \oplus \tilde{r}_{10} \oplus \tilde{r}_{11} \oplus \tilde{r}_{12} \oplus \tilde{r}_{13})^{-1} \quad (12)$$

Fuzzy weight of the first criterion is (0.118, 0.185, 0.28). Fuzzy weights are listed in Table IV.

TABLE III. FUZZY VALUE OF PAIRWISE COMPARISONS OF BEHAVIORAL MATURITY CRITERIA

\tilde{r}_i	$l\tilde{r}_i$	$m\tilde{r}_i$	$u\tilde{r}_i$
\tilde{r}	2.272	2.876	3.456
\tilde{r}	1.454	1.847	2.271
\tilde{r}	0.879	1.091	1.355
\tilde{r}	01.455	1.878	2.376
\tilde{r}	0.864	1.094	1.364
\tilde{r}	0.511	0.641	0.816
\tilde{r}	0.608	0.752	0.935
\tilde{r}	0.943	1.183	1.492
\tilde{r}	0.582	0.721	0.894
\tilde{r}	1.589	1.993	2.431
\tilde{r}	0.383	0.472	0.607
\tilde{r}	0.271	0.326	0.405
\tilde{r}	0.526	0.654	0.836

TABLE IV. FUZZY WEIGHTS OF BEHAVIORAL MATURITY CRITERIA

\tilde{W}_j	lw_j	mw_j	uw_j	Defuzzified weight	Rank
\tilde{W}_1	0.118	0.185	0.28	0.189	1
\tilde{W}_2	0.076	0.119	0.184	0.12.26	4
\tilde{W}_3	0.046	0.07	0.11	0.072	6
\tilde{W}_4	0.076	0.121	0.192	0.12.53	3
\tilde{W}_5	0.045	0.07	0.11	0.071	7
\tilde{W}_6	0.026	0.041	0.066	0.042	11
\tilde{W}_7	0.032	0.048	0.076	0.049	8
\tilde{W}_8	0.049	0.076	0.121	0.079	5
\tilde{W}_9	0.03	0.046	0.072	0.047	9
\tilde{W}_{10}	0.083	0.128	0.197	0.132	2
\tilde{W}_{11}	0.02	0.03	0.049	0.028	12
\tilde{W}_{12}	0.014	0.021	0.033	0.021	13
\tilde{W}_{13}	0.027	0.042	0.068	0.043	10

As shown, the top five priorities include transformational leadership (0.189), human and social skills (0.132), knowledge orientation and organizational knowledge (0.12.53), emotional

intelligence of managers (0.12.26) and trustful climate (0.079), respectively.

C. Conceptual Model Testing

Structural equation modeling (SEM) was used to analyze the conceptual model using the software Smart PLS. The structural model is reported below. T-values were used to analyze significance of the relationships; the Figures 1 and Figure 2 report t-values for structural relationships and measurement.

D. Hypothesis Testing

This section tests hypotheses by β -values and t-values. T-values > 1.96 indicate significant path; thus, the hypothesis is accepted ($\alpha=0.05$). Table 5 reports t-test results.

Based on PLS outputs, hypotheses are tested as follows:

- **Hypothesis 1:** Personnel empowerment as an aspect of behavioral maturity is effective on KM establishment. T=5.533 (>|1.96|) indicates that hypothesis 1 is confirmed at 0.99 confidence. Thus, personnel empowerment as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.199$ indicates direct and positive effect of personnel empowerment on KM establishment. word “data”
- **Hypothesis 2:** training courses for managers as an aspect of behavioral maturity is effective on KM establishment. T=4.155 (>|1.96|) indicates that hypothesis 2 is confirmed at 0.99 confidence. Thus, training courses for managers as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.356$ indicates direct and positive effect of training courses for managers on KM establishment.
- **Hypothesis 3:** teamwork spirit as an aspect of behavioral maturity is effective on KM establishment. T=3.181 (>|1.96|) indicates that hypothesis 3 is confirmed at 0.99 confidence. Thus, teamwork spirit as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.194$ indicates direct and positive effect of teamwork spirit on KM establishment.
- **Hypothesis 4:** decision-making power as an aspect of behavioral maturity is effective on KM establishment. T=2.009 (>|1.96|) indicates that hypothesis 4 is confirmed at 0.99 confidence. Thus, decision-making power as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.122$ indicates direct and positive effect of decision-making power on KM establishment.
- **Hypothesis 5:** human and social skill as an aspect of behavioral maturity is effective on KM establishment. T=5.390 (>|1.96|) indicates that hypothesis 5 is confirmed at 0.99 confidence. Thus, human and social skill as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.288$ indicates direct and positive effect of human and social skills on KM establishment.

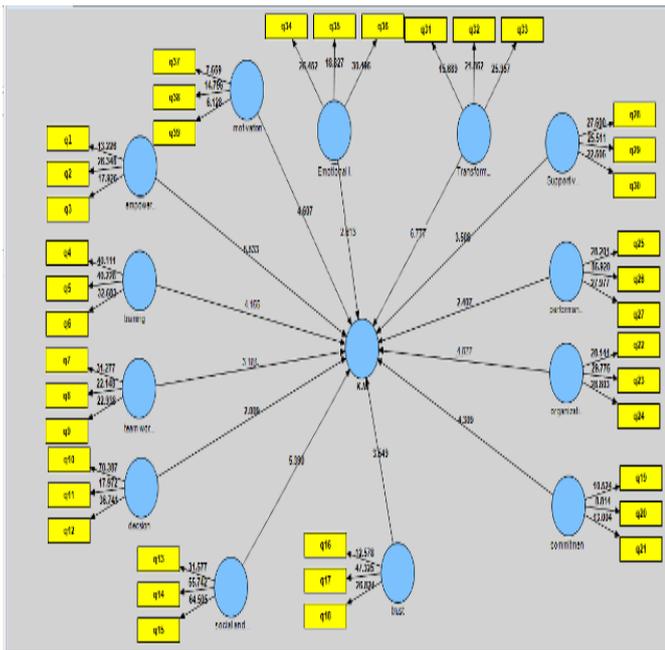


Fig. 1. PLS model for estimates of significance

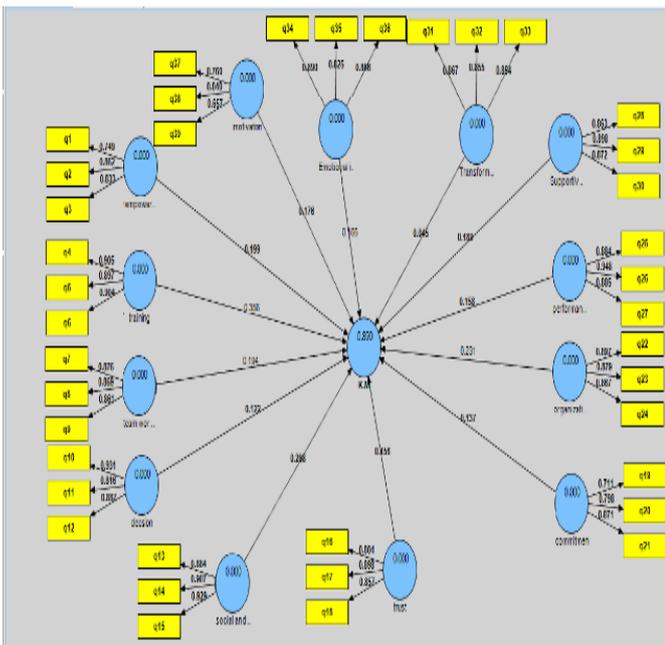


Fig. 2. PLS model for standardized estimates

- **Hypothesis 6:** trustful climate as an aspect of behavioral maturity is effective on KM establishment. $T=3.549 (>|1.96|)$ indicates that hypothesis 6 is confirmed at 0.99 confidence. Thus, trustful climate as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.156$ indicates direct and positive effect of trustful climate on KM establishment.

- **Hypothesis 7:** professional commitment and responsibility as an aspect of behavioral maturity is effective on KM establishment. $T=4.309 (>|1.96|)$ indicates that hypothesis 7 is confirmed at 0.99 confidence. Thus, professional commitment and responsibility as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.137$ indicates direct and positive effect of professional commitment and responsibility on KM establishment.
- **Hypothesis 8:** knowledge orientation and organizational knowledge as an aspect of behavioral maturity is effective on KM establishment. $T=4.827 (>|1.96|)$ indicates that hypothesis 8 is confirmed at 0.99 confidence. Thus, knowledge orientation and organizational knowledge as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.231$ indicates direct and positive effect of knowledge orientation and organizational knowledge on KM establishment.
- **Hypothesis 9:** quantitative management as an aspect of behavioral maturity is effective on KM establishment. $T=2.407 (>|1.96|)$ indicates that hypothesis 9 is confirmed at 0.95 confidence. Thus, quantitative management as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.158$ indicates direct and positive effect of quantitative management on KM establishment.
- **Hypothesis 10:** supportive behavior as an aspect of behavioral maturity is effective on KM establishment. $T=3.508 (>|1.96|)$ indicates that hypothesis 10 is confirmed at 0.99 confidence. Thus, supportive behavior as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.189$ indicates direct and positive effect of supportive behavior on KM establishment.
- **Hypothesis 11:** transformational leadership as an aspect of behavioral maturity is effective on KM establishment. $T=6.770 (>|1.96|)$ indicates that hypothesis 11 is confirmed at 0.99 confidence. Thus, transformational leadership as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.045$ indicates direct and positive effect of transformational leadership on KM establishment.
- **Hypothesis 12:** emotional intelligence as an aspect of behavioral maturity is effective on KM establishment. $T=2.613 (>|1.96|)$ indicates that hypothesis 12 is confirmed at 0.99 confidence. Thus, emotional intelligence as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.166$ indicates direct and positive effect of emotional intelligence on KM establishment.
- **Hypothesis 13:** stimulation and motivation of organizational people as an aspect of behavioral maturity is effective on KM establishment. $T=4.607 (>|1.96|)$ indicates that hypothesis 13 is confirmed at 0.99 confidence. Thus, stimulation and motivation of organizational people as an aspect of behavioral maturity is effective on KM establishment. Moreover, $\beta=0.176$ indicates direct and

positive effect of stimulation and motivation of organizational people on KM establishment.

TABLE V. T-TEST RESULTS; HYPOTHESIS TESTING

Hypothesis	Variable		β -value	t-value	Result
	Independent	Dependent			
1	Personnel empowerment	KM establishment	0.199	5.533	Accepted
2	Training courses for managers	KM establishment	0.356	4.155	Accepted
3	Teamwork spirit	KM establishment	0.194	3.181	Accepted
4	Decision making power	KM establishment	0.122	2.009	Accepted
5	Human and social skills	KM establishment	0.288	5.390	Accepted
6	Trustful climate	KM establishment	0.156	3.549	Accepted
7	Commitment and responsibility	KM establishment	0.137	4.309	Accepted
8	Knowledge orientation	KM establishment	0.231	4.827	Accepted
9	Quantitative management	KM establishment	0.158	2.407	Accepted
10	Supportive environment	KM establishment	0.189	3.508	Accepted
11	Transformational leadership	KM establishment	0.045	6.77	Accepted
12	Emotional intelligence	KM establishment	0.166	2.613	Accepted
13	Stimulation and motivation	KM establishment	0.176	4.607	Accepted

These findings are consistent with [8, 21-26] who identified a part of effective variables on behavioral maturity. For example, in [21] authors identified feedback and participatory culture as effective factors on maturity of human resources. In [22], authors noted personnel attitude as an important factor in maturity of employees and managers in knowledge management, while they identified pessimism and organizational silence as destructive factors in KM establishment; this study identified these factors in a wider framework. Moreover, in [23], the author identified participatory culture, trustful climate, feedback, transformational leadership, organizational intelligence and spirituality as effective factors on behavioral maturity of employees and managers, which is partially consistent with the current study. In [26], the author identified objective trainings, performance evaluation and meritocracy as the most important measures in maturity of human resources in establishing knowledge management.

VI. CONCLUSION

Three steps were used to identify the effective factors on behavioral maturity of managers in establishing knowledge management. In the first step, the author identified a number of criteria based on theoretical background and literature review. Then, the author used interviews with experts to identify some other factors effective on behavioral maturity of managers in establishing knowledge management. Thirty-four criteria were

identified in this step. The author used screening for consensus of experts. The identified criteria were weighted by 20 experts. According to the experts, the importance of 13 criteria was higher than average. Fuzzy AHP was used to obtain importance of variables. By pairwise comparison of variables by insurance and academic experts, the author weighted the variables. According to the results, the top five priorities included transformational leadership (0.189), human and social skills (0.132), knowledge orientation and organizational knowledge (0.12.53), emotional intelligence of managers (0.12.26) and trustful climate (0.079), respectively. As the results showed, behavioral maturity of managers was higher than average for KM establishment; this indicates good maturity of managers in KM establishment. T-test results showed that the mean behavioral maturity was higher than 3 (3.415-3.882), indicating relatively high importance of behavioral maturity among managers of Iran Insurance Company. This suggests that managers of Iran Insurance Company are well aware of the importance of KM establishment in their organization and support this effectively. As the results showed, training courses for managers, personnel empowerment and transformational leadership are highly important; thus, top management of Iran Insurance Company is recommended to make efforts to improve behaviors, job awareness and career path of employees and managers to direct them in a predetermined framework and foster them based on specified factors.

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