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Determining structural relationship between knowledge management and creativity with the mediating role of psychological empowerment among staff of departments of education in Qom, Iran

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Abstract

The present study is aimed to determine the structural relationship between knowledge management (KM) and creativity with the mediating role of psychological empowerment (PE) among the staff of departments of education in Qom Province, Iran. The present study is a correlational descriptive research. The statistical population includes all the staff of the departments of education in Qom Province, out of whom 200 are selected as the sample. Four questionnaires are used to collect the preliminary data for testing the hypotheses: Hemmati Knowledge Management Questionnaire (2010), Randsip's Creativity Questionnaire (1979), and Spritzer's Psychometric Empowerment Questionnaire (1995). The validity of these questionnaires is approved by experts. Moreover, their reliability is checked with Cronbach's alpha, which equals 0.88, 0.81, and 0.95, respectively. In this study, to analyze the data, descriptive (mean and SD) and inferential methods (Kolmogorov-Smirnov and Pearson's correlation) are used, and modeling is performed in AMOS. Results reveal that KM in the staff of the mentioned organization is at the moderate level, PE is above the moderate, and creativity is at a very good level, higher than the other two variables. Based on the hypotheses, significant correlation is found between KM and creativity ($p<0.01$), KM and PE ($p<0.01$), as well as PE and creativity ($p<0.01$). However, the proposed model is not fully confirmed. In the corrected model, the relationship between KM and creativity becomes completely significant, while the relationship between PE and creativity is not. Moreover, the component of PE fails to play a mediating role between KM and creativity. Therefore, PE cannot indirectly affect the direction or degree of correlation between KM and creativity. Based on the results, we suggest the establishment of an appropriate structure for the use of KM in departments of education, creation of motivation, and offering of rewards for the staff for group activities, knowledge generation, and proposal of innovative ideals. Moreover, it is recommended to form groups to enhance the level of knowledge and knowledge sharing among the staff.

Keywords: Knowledge management; creativity; psychological empowerment; staff of departments of education

Introduction

Knowledge (experience-based understanding) is a key source in every organization. The more one knows, the better one could function. In today's world, knowledge is not only a capital, but the most important capital for organizations. Therefore, in the era of knowledge in which knowledge is the most important capital, organizations require a different managerial approach to organizational problems and staff. The maintenance of staff and enhancement of their learning capacity play a determining role in the success and competitive advantage of organizations. Therefore, similar to physical resource (e.g. money) management, knowledge management (KM) must be a part of the standard policies of every organization (Entezari, 2006).

KM is the process of discovering, acquiring, developing, creating, teaching, maintaining, evaluating, and exploiting appropriate knowledge at appropriate time by the appropriate place in the organization, which is performed by establishing a link between human resources, information and communication technology, and creating a favorable structure for obtaining organizational goals (Afrazeh, 2007). Thus, an efficient and effective KM is of utmost importance because organizations must effectively use all their resources for success and better performance in the competitive environment, which requires the KM system (Suresh, 2007). Moreover, considerable percentage of organizational asset lies in the brains of their staff. As a result, one of the most important goals of any KM program is to empower the organization in exploiting this asset. How an organization transforms latent knowledge into apparent knowledge expresses the capabilities of KM in that organization (Clarke & Rollo, 2001). Organizations must be able to create and use new knowledge and recreate the existing knowledge in order to access their goals, because, in today's world, they must be managed in a completely competitive environment faced with extraordinary evolutions. In such conditions, managers have little time for controlling their staff and must invest maximum time and energy in the identification of the organization's external and internal environments, thereby delegating other daily responsibilities to the staff (Nonaka, Toyama, & Konno, 2001). With regard to the importance of KM, it can be stated that organizations which have established KM as their main capability considerably differ from other organizations. These changes include the high speed of processes, identification of and adaptation to changes, maintenance and growth of intellectual asset, and sustainable competitive advantage through continuous creativity (Soleimani et al., 2016). Staff empowerment is of utmost importance in organizations, serving as a major source of offering appropriate services to people in organizations. In fact, empowerment is the strategy for organizational development and flourishing. Rapid changes have made organizations put empowerment and knowledge on their agenda, because these two are among the most important organizational development factors. KM has been introduced as one of the most recent organizational topics in management. The significance of KM for staff empowerment as an important source and major success is evident considering its effects on the psychological empowerment (PE) of staff in line with the general policies of Iran's administrative system introduced by the Supreme Leader, government's emphasis on the creation of a knowledge-based society, and priority of movement towards knowledge-based policies in the 20 Year Perspective Pan as well as Fourth and Fifth Economic, Social, and Cultural Development Plans (Saedi, Saedi, & Farhadi, 2016). On the other hand, the development of organizations' developmental infrastructure is related to the creativity and innovation of human resources (Haydari, 2009).

Staff can properly fulfill their responsibilities only when they have enough skills, knowledge, and potentials and are well familiar with organizational goals. One tool which can assist managers in this regard is the process of empowerment (Abdollahi & Naveh Ebrahim, 2016). Today, organizational knowledge has changed the face of organizations as an inevitable advantage. In the modern organizational world, the number of staff or size of buildings does not determine organizational success. Rather, it is the knowledge to use them in the organization which has become an important problem and concern on the road to success which, indeed, has certain pre-requisites. The important point is that, without competent staff who can perform an effective role in the valuable process of KM establishment, the success of this process cannot be

ensured. Therefore, the necessity of staff empowerment is evident to all (Mojabi, 2014). Staff empowerment is an essential managerial tool which can be used for directing human resources towards increased productivity and include five dimensions of significance, competency, self-determination, confidence, and effect (Abdolmaleki, 2002). Staff empowerment is a major principle in organizations and effective management, which can improve efficiency in organizations by delegating further power and control to the subordinates. Moreover, empowerment is associated with innovative behaviors as well as effective management and leadership (Morrion, 1997) and occurs when the staff have received sufficient training, all the information required for the job is available, the possible tools are accessible, and people are completely involved with the job, participate in decision-making, and are awarded for optimal results (Kreitner, 1996). Empowerment begins with a change in the staff's beliefs, thoughts, and attitudes; i.e. they must believe that they have the capability and competency for successfully performing their duties, feel they have the freedom and independence to perform activities, believe they can affect and control occupational outcomes, feel they follow meaningful and valuable occupational goals, and believe they are treated with honesty and equity (Salajeghe, Pourrashidi, & Moosai, 2013).

The human force which requires the power of thinking, creativity, and innovation is the largest asset of organizations, and the improvement or progress in organizations happens by the human force. The intellectual and mental power of the staff lie in the organization, and any organization or manager which can better use this hidden capital can accordingly grow and develop (Tavakkol & Alimiri, 2012). A factor affecting the emergence and flourishing of innovation and creativity in organizations is motivation. Today, based on new organization and management theories, the creation of motivation is an important responsibility of managers in organizations (Salehi & Dehqan, 2010). Creativity can flourish and develop in the staff, thus helping the promotion and progress of the organization by increasing motivation among the staff, giving them freedom of action, delegating authority to them, establishing work groups, supporting members for combining different ideas, giving rewards, enhancing mutual collaboration, creating a peaceful environment, allocating financial resources for creating motivation in the staff, and promoting work-related incentives (Bahmani, Kargar, & Afshari, 2013).

Ebrahimian and Kameli (2016) conducted a study entitled “Relationship between knowledge management and creativity among staff” and proposed solutions for its enhancement. Results revealed that significantly positive correlation existed between the use of KM by staff and their creativity. Thus, all the dimensions of the KM components (people, process, technology, and culture) must receive attention.

Jahani Javanmardi (2016) examined the relationship between spiritual leadership and PE, on the one hand, and creativity of the staff, on the other hand, in Ministry of Communications and Information Technology. Results revealed that significantly positive relationship between spiritual leadership and PE, as well as between creativity and perspective, altruism, faith, significance, membership, organizational commitment, feedback, self-efficacy, significance, and effect.

Hosseini et al. (2016) studied the correlation between organization creativity and KM among the nurses working in hospitals in Boroujerd, Iran, and found that positive and direct correlation

existed between organizational creativity and KM in nurses. From among sub-scales of KM, knowledge sharing and use were significantly correlated with organizational creativity.

Khazanehdar (2016) investigated the effects of KM on creativity in the Iranian national drilling companies and reported that KM affected the generation of innovation; this effect was also observed in the variables of knowledge transfer, knowledge generation, knowledge dissemination, knowledge establishment, and knowledge identification, and there was no evidence for rejecting the hypotheses.

Soleimani et al. (2016) explored the relationship between KM and creativity in the staff of Kermanshah Regional Water Organization. Results revealed that a significant relationship existed between KM and creativity in staff, and the components of knowledge conceptualization, refinement, organization, dissemination, and use significantly and positively influenced the staff creativity. Therefore, the components of KM could affect the level of creativity of the staff of the mentioned organization.

Qiasi Nodoushan, Jahani Javanmardi, and Khorsandi Taskouh (2016) examined the relationship between PE and creativity in the staff of Ministry of Communications and Information Technology. Results showed that significantly positive correlation existed between creativity and PE, as well as between creativity and the dimensions of self-efficacy, autonomy, significance, and effect. Moreover, no relationship was found between the dimension of confidence/trust and creativity, and PE affected creativity. The higher the staff's PE, the higher their creativity would be and their creativity could be enhanced by increasing their PE.

Azma, Bazvand, and Kamari (2015) explored the relationship between the dimensions of empowerment and personal creativity of the staff of University of Ilam. They found that no relationship existed between the sense of significance, competency, and effect, on the one hand, and personal creativity, on the other hand. However, the sense of choice was significantly associated with personal creativity.

Baezzat, Aflakifard, and Shahidi (2015) studied the relationship between KM, self-efficacy, and creativity among pre-school teachers and showed that a significantly positive relationship existed between all dimensions of KM and teachers' self-efficacy and creativity. Moreover, from among KM dimensions, knowledge organization had a significant predictive power for teachers' self-efficacy, and knowledge organization and use had the significant predictive power for teachers' creativity.

Shahlaee (2014) developed the relationship model of KM components and creativity among the students of physical education and sports sciences. Results showed that all the components of KM significantly affected the creativity of these students ($p<0.05$). The component of knowledge sharing and organizational partnership had the highest importance in predicting students' creativity with the predictive power of 24%. KM also significantly affected the students' level of creativity.

Ghanbari (2014) studied the effect of PE teaching on the emotional creativity and cognitive creativity of 9^{th} grade female students in Eivan, Iran. Results confirmed the effectiveness of PE teaching on cognitive and emotional creativity at the confidence level of 99%.

Mahdavi (2014) examined the mediating role of creativity in the relationship between empowerment and entrepreneurship among the staff of Islamic Azad University, Shiraz Branch. Results revealed that a significant relationship existed between empowerment and entrepreneurship, and creativity acted as a mediating variable in the relationship between the other two variables.

Moosavi, Safania, and Shirvani (2014) conducted a study entitled "Effect of knowledge management and psychological empowerment on the creativity of the staff of sports departments in Ilam". Results showed that KM and its dimensions as well as PE and its dimensions were significantly and positive correlated with staff creativity, and KM and PE explained 99% of the variance in creativity.

In the study entitled "Relationship between leadership power and job satisfaction, work effects and creativity, with an emphasis on the role of self-leadership and psychological empowerment", Amandsen and Martinsen (2015) concluded that self-leadership and PE had direct and indirect, positive effects on other variables, i.e. job satisfaction, work effects, and creativity.

Ozaralli (2015) studied the relationship between a competent leader and creativity, emphasizing the moderating role of a sense of PE. Results indicated that an empowering leadership positively affected the staff creativity. In addition, this sense of empowerment modified this relationship, and the competent leaders' behaviors strongly affected the staff creativity when they felt empowered, much more than when they did not.

Nowacki and Bachnik (2015) studied the creativity in KM and expressed that if a company wanted to achieve current advantages, it would not be enough for it to accept the frameworks or tools of KM. Rather, it must look for advanced or even innovative solutions to ensure excellent outcomes for some time. This also was true in the case of KM.

Wilson (2015) conducted a study entitled "Effect of creativity on organizational education and empowerment." Results showed that creativity positively affected empowerment.

Spritzer (2014) studied staff empowerment and concluded that the staff's self-confidence, access to information on organizational missions, work-related performance, and creative and innovative behaviors had a significantly positive relationship with PE.

Liyan et al. (2012) examined the mediating role of PE in increasing creativity. The statistical population in this study comprised 385 workers in different Chinese organizations. Results indicated that EP was completely effective for creativity.

Zhang and Bartol (2010) studied the relationship between empowering leadership and staff creativity, focusing on the effect of PE, intrinsic motivation, and creative process interaction. Empowering leadership positively affected PE which, in turn, was affected by intrinsic motivation and creative process interaction. This was followed by empowering leadership and PE with a positive effect on creativity. The identity and role of empowerment modified the relationship between empowering leadership and PE.

It is necessary to conduct studies on this topic since KM, staff empowerment, and creativity in departments of education have been neglected. The results of the present study could help the

officials and planners in the departments of education in Qom Province, Iran, to create a knowledge-based structure, thus providing an appropriate environment for staff empowerment, thereby developing innovation and creativity. In total, considering the importance of the discussed topics and lack of a comprehensive study on the mentioned variables, the present study is aimed to examine the relationship between them. Thus, the main research question is: "Is there a significant relationship between KM and EP, on the one hand, and creativity of the staff of departments of education in Qom Province on the other hand"? Accordingly, the following two hypotheses were posed:

1. There is a significant relationship between the components of KM and creativity of the staff of departments of education in Qom Province.

1. There is a significant relationship between the components of EP and creativity of the staff of departments of education in Qom Province.

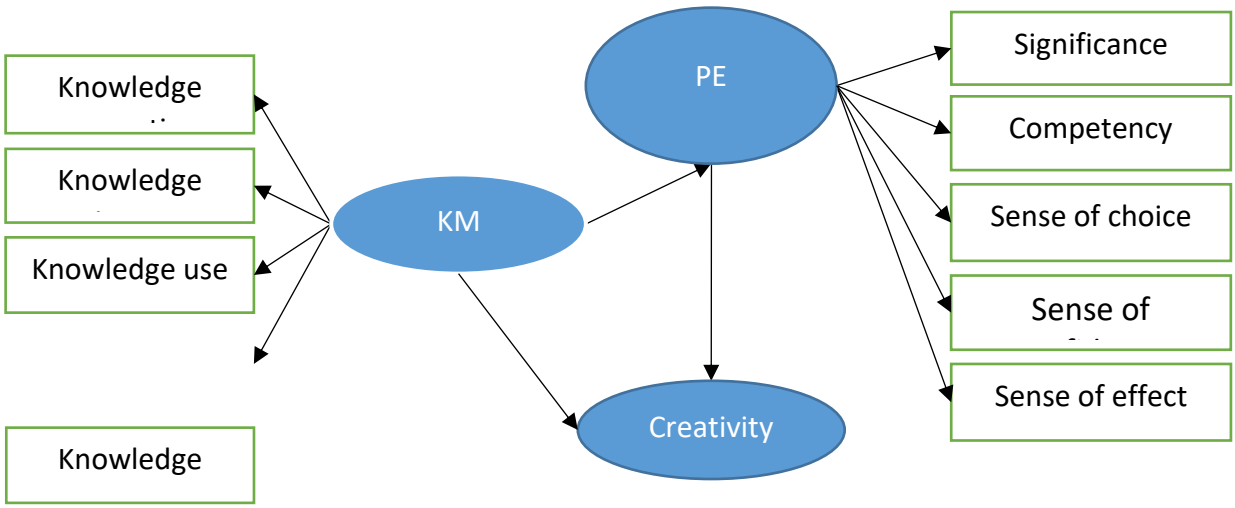

Figure 1. Conceptual model of the study

Method

This was an applied, descriptive study, in which the data were collected using a field study. The statistical population comprised all the staff of the departments of education in Qom Province, out of whom 200 were selected using cluster sampling. Among these, 180 accurately responded to the questionnaires, while 20 returned incomplete questionnaires. The research team visited the departments in working hours and distributed the questionnaires among the staff. Moreover, to administer the questionnaires, the team met all the employees in person and explained the importance of the study.

Research instruments

Hemmatian Knowledge Management Questionnaire (2010): This questionnaire has 25 response-oriented items aiming to examine the dimensions of KM (knowledge generation, sharing, use, and storage) in organizations. This questionnaire is scored on a five-point Likert scale: Very little (1), Little (2), Moderate (3), High (4), and Very high (5). These options are

weighed from 1 to 5, respectively. The face and content validity of this questionnaire in terms of the conformity between items and goals, clarity of items, sentence structure, etc. were confirmed by seeking the opinion of seven experts. Its reliability was also confirmed with the Cronbach's alpha of 0.88 (0.81 for knowledge generation, 0.76 for knowledge sharing, 0.69 for knowledge use, and 0.70 for knowledge storage.

Spritzer's Psychometric Empowerment Scale (1995): This questionnaire examines five dimensions with 17 items. It is scored on a five-point Likert scale including: Very little (1), Little (2), Moderate (3), High (4), and Very high (5), weighing 1 to 5, respectively. As this was a standard instrument, its validity had previously been approved by experts. In the present study, the total reliability of this scale was 0.95. Moreover, the reliability of the dimensions of competency, autonomy, effect, significance, and confidence equaled 0.59, 0.81, 0.84, 0.89, and 0.88, respectively.

Randsip's Creativity Questionnaire (1979): This questionnaire was developed by Randsip and published in the Staff journal in 1979 (Ivancevich & Matteson, 1979). In their book entitled *Organizational Behavior and Management*, and in the chapter called *Decision-Making*, Ivancevich and Matteson reported that this questionnaire was a comprehensive tool for measuring staff creativity in educational organizations. This questionnaire was translated into Persian by Moghimi (2009). In this study, the 30-item Randsip's questionnaire was employed. The face and content validity of this questionnaire had been approved by experts, with the reliability of 0.81 (Cronbach's alpha), and showed high validity. The items are scored on a Likert scale from Totally agree (5), Agree (4), No opinion (3), Disagree (2), and Totally disagree (1). However, some items must be reversely scored. These include Items 1, 2, 3, 5, 9, 10, 11, 14, 15, 17, 20, 16, 227, and 18. Accordingly, 4 out of the 30 items were reversely scored. Higher scores show higher creativity and vice versa.

Data analysis method: In this study, descriptive statistics was used to determine central tendency and dispersion indices, and the hypotheses were tested using structural equations modeling (SEM) and path analysis (PA). Furthermore, the relationship between the variables was assessed using Pearson's correlation coefficient. All the analyses were performed in SPSS (Statistical Package for the Social Sciences; v. 22) and AMOS (Analysis of Moment; v. 24). The level of significance was set at <0.01.

Results:

First, demographic characteristics were studied. In this study, 40.6% of the participants were male and 59.4% were female, aged 25-54 years old (mean of 38.2 and SD of 6.8 years old). They had the work history of 1-29 years (mean of 13.6 years and SD of 6.8 years). Moreover, 6.1% of the participants had an Associate degree (n=11), 55.0 had Bachelor's (n=99), and 38.9 had Master's and above (n=70). In this study, the normality of data distribution was examined and confirmed using Kolmogorov-Smirnov test. Below, results of the descriptive and inferential statistics are discussed.

Table 1. Descriptive statistics of the research variables

Statistical indices	Mean	SD
KM	82.83	18.828

Knowledge generation	23.27	5.078
Knowledge sharing	19.69	5.351
Knowledge use	16.29	4.130
Knowledge storage	23.58	5.829
PE	60.22	11.879
Significance	11.71	2.027
Competency	14.42	3.371
Sense of choice	10.71	2.888
Sense of effect	10.54	2.857
Sense of confidence	12.85	2.934
Creativity	109.37	18.448

Table 1 presents the mean and SD of KM and its components, PE and its components, and creativity.

Research hypothesis testing

"There is a significant relationship between the components of KM and the creativity of the staff of departments of education in Qom Province."

Table 2. Results of descriptive statistics and correlation coefficients between research variables (n=180)

Variables	Correlation coefficients				
	1	2	3	4	5
1. Knowledge generation	1.00				
2. Knowledge sharing	0.849**	1.00			
3. Knowledge use	0.807**	0.819**	1.00		
4. Knowledge storage	0.761**	0.776**	0.818**	1.00	
5. KM	0.924**	0.933**	0.923**	0.915**	1.00
5. Creativity	0.741**	0.701**	0.622**	0.631**	0.731**

** significant at 0.01

Based on Table 2, KM and its components (knowledge generation, sharing, use, and storage) are significantly and directly correlated with creativity ($p<0.01$). Moreover, all the components of KM were positively and directly correlated with one another ($p<0.01$).

"There is a significant relationship between the components of EM and the creativity of the staff of departments of education in Qom Province."

Table 3. Results of descriptive statistics and correlation coefficients between research variables (n=180)

Variables	Correlation coefficients					
	1	2	3	4	5	6
1. Significance	1.00					
2. Competency	0.635**	1.00				
3. Sense of choice	0.552**	0.736**	1.00			
4. Sense of effect	0.591**	0.773**	0.799**	1.00		
5. Sense of confidence	0.425**	0.558**	0.580**	0.610**	1.00	
6. PE	0.732**	0.895**	0.882**	0.906**	0.766**	1.00
7. Creativity	0.377**	0.602**	0.611**	0.578**	0.351**	0.609**

** Significant at 0.01

Based on Table 2, PE and its components (significance, competency, choice, effect, and confidence) were significantly and directly correlated with creativity ($p<0.01$). Also, all the components of PE were positively and directly correlated with one another ($p<0.01$).

Examining the main research question

Is there is a significant relationship between KM and PE, on the one hand, and creativity on the other hand, among the staff of departments of education in Qom Province?

This question was answered via SEM. First, the KM and PE measurement models were examined and, then, the structural model was investigated.

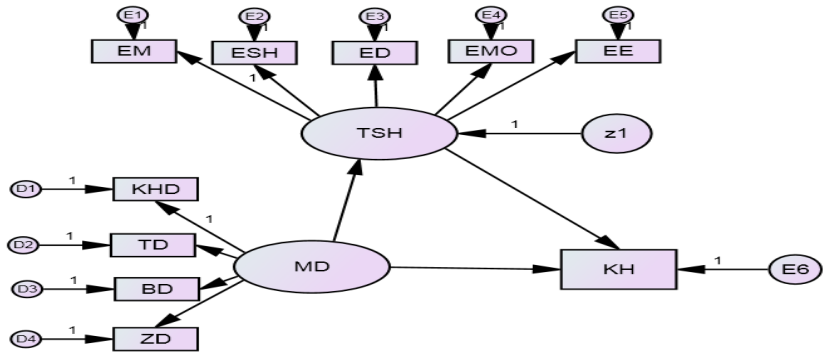

Figure 1. SEM for KM, PE, and creativity

Estimating the KM measurement model

Here, we seek to test the hypothesis that KM can be measured using knowledge generation, sharing, use, and storage. In what follows, first, the measurement model and, then, a summary of the results for confirming the measurement model are presented in Table 4. Based on the results, the research hypothesis stating that "The model fits the data well" (i.e. "KM can be measured using knowledge generation, sharing, use, and storage") was confirmed.

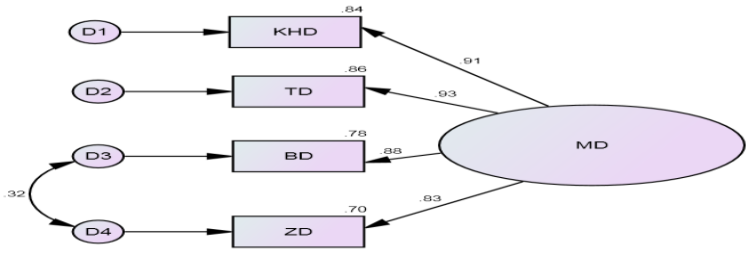

Figure 2. KM measurement model

Table 4. Some general fit indices for the KM measurement model

Index	Main	Corrected	Allowed value
Df	2	1	-
Chi-square	10.988	0.021	0.05< p
P (significance level)	0.004	0.885	0.05< p
CFI (comparative)	0.987	1.000	>0.9
PCFI (parsimonious)	0.329	0.167	>0.5
RMSEA	0.158	>0.0005	>0.05

Estimating the PE measurement model

Here, the researcher attempted to test the hypothesis that "PE can be measured using the sense of significance, competency, choice, effect, and confidence". To this end, first, the model was plotted. In what follows, the measurement model and, then, a summary of the results for confirming the measurement model are presented in Table 5. Based on the results, the hypothesis that "The model is well fitted to the data" (i.e. "PE can be measured using the sense of significance, competency, choice, effect, and confidence") was confirmed.

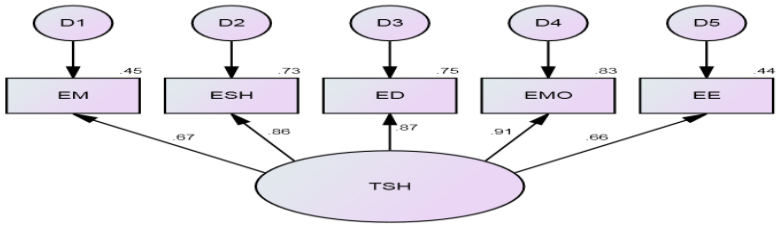

Figure 3. PE measurement model

Table 5. Some general fit indices for the PE measurement model

Index	Calculated value	Allowed value
Df	5	-
Chi-square	7.257	0.05< p
P (significance level)	0.202	0.05< p
CFI (comparative)	0.996	>0.9
PCFI (parsimonious)	0.498	>0.5
RMSEA	0.050	>0.05

Estimating the SEM

After the measurement models turned out to be acceptable, the SEM was examined. To this end, the model was implemented to check the condition of rank (lack of negative degree of freedom) and order (Chi-squared report of the model showing the calculations on parameter estimation and re-production of covariance matrix). Results showed that both conditions held true. In other words, the experimental data supported the developed theoretical model.

Examining general model fit indices

Table 6. Examining general fit indices for the SEM of KM, PE, and creativity

Index	Main	Correction 1 by eliminating the PE ← creativity path	Correction 2 In addition to correction 1 D3←- -→ E6	Correction 3 In addition to correction 2 D3←- -→ E6	Allowed value

Df (degree of freedom)	32	33	32	31	-
Chi-squared	62.921	63.049	52.873	45.097	0.05< p
P (significance level)	0.001	0.001	0.012	0.052	0.05< p
CFI (comparative)	0.980	0.981	0.987	0.991	>0.9
PCFI (parsimonious)	0.697	0.719	0.702	0.683	>0.5
RMSEA	0.073	0.071	0.060	0.050	>0.05

Some of the most important results of the above table show that in the main model:

The comparative of fit index (CFI) and the parsimonious comparative fit index (PCFI) of the model were optimal. However, the root mean square error of approximation (RMSEA) index and, more importantly, the absolute fit index (Chi-squared) and, as a result, the probability level were not optimal. The value of Chi-square equaled 62.921 and the level of significance equaled 0.001. Therefore, the hypothesis that "The model is well fitted to the data" was rejected. The smaller the Chi-squared value and the higher the confidence level (minimum $p>0.05$), the better the fit of the researcher-made model would be. Thus, the developed model was not supported by the collected data and, therefore, required correction.

In the corrected model:

1. The coefficient of impact of the PE on creativity showed the standard value of 0.041 and the non-standard value of 0.573. The critical ratio computed for this parameter was 0.359 at the significance level of 0.720. In total, these values expressed lack of a significant difference between 0 and the calculated coefficient of impact ($p>0.05$). Therefore, there was statistical justification for eliminating this parameter. By eliminating this path and re-running the model, CFI, PCFI, and RMSEA indices of the model were slightly improved. However, the Chi-squared index did not decrease, but even slightly increased, reaching 63.049 from 62.921, and the significance level did not change ($p=0.001$). Therefore, we must work with other correction indices.

2. By correlating D3 and E6 variables, the model was corrected and tested once more. The CFI, PCFI, and RMSEA indices of the model were slightly improved. Nevertheless, the Chi-squared index was decreased and reached 52.873, and the significance level reached p=0.012. Thus, the model still needed correction.

3. By correlating E1 and E2 variables, the model was corrected and tested once more. The CFI of the model slightly improved. The PCFI was decreased slightly. The RMSEA of the model was increased to an acceptable level. Nevertheless, the Chi-squared index was decreased and reached 45.097, and the significance level reached p=0.05. In total, although the PCFI was slightly decreased due to losing one degree of freedom, the other indices showed a better status than the original model. Therefore, the first hypothesis, i.e. "The model is well fitted to the data", was confirmed. It can be concluded that experimental data supported the developed theoretical model. Now, the details of the model must be examined:

Examining the details of the fitted model and coefficients of impact

To examine partial fit indices and coefficients of impact, the regression weight tables and covariance table were used for the proposed corrections, with findings presented in the table below.

Table 7. Estimated parameters for the SEM of KM, PE, and creativity

Parameter	Developed model			Final corrected model		
	Standard estimate	Critical value	Significance level	Standard estimate	Critical value	Significance level
KM ← EP	0.229	8.767	>0.0005	0.223	8.440	>0.0005
PE ← Significance	1	-	-	1	-	-
PE ← Competency	2.200	9.990	>0.0005	2.257	10.383	>0.0005
PE ← Sense of choice	1.906	10.076	>0.0005	1.994	9.510	>0.0005
PE ← Effect	1.933	10.266	>0.0005	2.013	9.631	>0.0005
PE ← Confidence	14.32	7.848	>0.0005	1.488	7.550	>0.0005
KM ← Knowledge storage	1	-	-	1	-	-
KM ← Knowledge use	0.747	18.494	>0.0005	0.757	18.337	>0.0005
KM ← Knowledge sharing	1	16.551	>0.0005	0.992	16.402	>0.0005
KM ← Knowledge generation	0.948	16.520	>0.0005	0.942	16.424	>0.0005

KM ← Creativity	2.738	6.109	>0.0005	2.928	12.588	>0.0005
PE ← Creativity	0.573	0.359	0.720	-	-	-
KM variance	24.009	6.898	>0.0005	24.073	6.909	>0.0005
Structural error variance of PE	0.495	4.307	>0.0005	0.433	4.097	>0.0005
Variance of significance	2.327	8.956	>0.0005	2.457	8.914	>0.0005
Variance of competency	2.788	7.366	>0.0005	3.001	7.478	>0.0005
Variance of sense of choice	1.906	7.155	>0.0005	1.817	6.919	>0.0005
Variance of sense of effect	1.541	6.526	>0.0005	1.515	6.358	>0.0005
Variance of sense of confidence	4.953	8.974	>0.0005	4.954	8.961	>0.0005
Variance of knowledge storage	9.779	7.995	>0.0005	9.714	7.952	>0.0005
Variance of knowledge use	3.560	7.359	>0.0005	3.118	6.757	>0.0005
Variance of knowledge sharing	4.468	6.619	>0.0005	4.803	7.093	>0.0005
Variance of knowledge generation	4.071	6.658	>0.0005	4.293	7.069	>0.0005
Variance of creativity	140.636	8.727	>0.0005	132.090	8.521	>0.0005
Error covariance of knowledge use ←-→ error of knowledge storage				1.226	2.111	0.035
Error covariance of knowledge use ←-→ error of creativity				-5.876	-3.319	>0.0005
Error covariance of sense of significance ←-→ error of competency				0.641	2.603	0.009

In the developed model, partial fit indices (critical ratios and their significance level) showed that all factor loadings, structural coefficients, and coefficients of impact significantly differed from 0, except for PE on creativity (p=0.720); in the corrected model, this path was removed.

In the corrected model, partial fit indices (critical ratios and their significance levels) indicated that all factor loadings, structural coefficients, and coefficients of impact significantly differed from 0. Three error covariances defined between variables also significantly differed from 0. In general, based on the significance of factor loadings and optimal indices of fit, it can be stated that the correct structural model of KM, PE, and creativity was approved. Below, the forms of the corrected structural model of KM, PE, and creativity with non-standard and standard coefficients are presented.

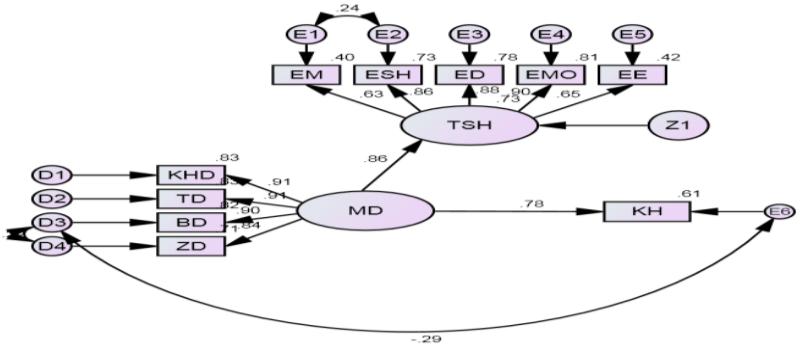

Figure 4. The corrected structural model of KM, PE, and creativity with non-standard and standard coefficients

In the figure above, the standardized regression weights (factor loadings) of the shared factors (latent variables) and each representative (observed variables) as well as the R^2 are given. These coefficients describe the variance of the observed variables explained by shared factors (latent variables). It is clear that all the observed variables are loaded on shared factors. Knowledge generation and sharing variables are the best representatives for KM. Its standardized regression weight equals 0.91; i.e. KM explains about 83% of the variance of knowledge generation and knowledge sharing. Sense of effect is the best representative of EP. Its standardized regression weight equals 0.90. In other words, EP explains about 81% of the variance of the sense of effect. The relationship between KM and EP is 0.86; i.e. KM explains about 73% of the variance of PE. The relationship between KM and creativity is 0.78. In other words, KM explains about 61% of the variance of creativity.

Discussion and Conclusion

Results of the present study showed that significantly positive correlation existed between KM and creativity, with the Pearson's coefficient of 0.731. As a result, the hypothesis was confirmed. This study was consistent with those by Ebrahimian and Kameli (2016), Soleimani et al. (2016), and Nowacki and Bachnik (2015). Today, knowledge in any organization is like the stimulating force for that organization and everything is affected by knowledge in the organization. Knowledge can be called the basic ground for all activities. Holding educational

workshops for promoting the level of interdisciplinary knowledge for all these factors helps the progress of KM in the organization and, therefore, enhancement of creativity.

Significantly positive correlation existed between knowledge generation and creativity (r=0.741, p=0.01). This was in line with the results of studies by Poursoltani Zarandi and Iraji (2013), and Niaz Azari, Barimani, and Hajigholikhani (2011). The component of knowledge generation had the highest correlation coefficient with creativity. Knowledge generation refers to an organization's capability to generate and create new and useful ideas and solutions. Knowledge generation in organizations is a basic requirement for KM in order to update the data. Organizations must prevent excessive data from entering the organization because many pieces of data are unimportant.

Significantly positive correlation existed between knowledge sharing and creativity (r=0.701, p=0.01). This was in line with the results of studies by Hosseini et al. (2016), Poursoltani Zarandi and Iraji (2013), and Niaz Azari, Barimani, and Hajigholikhani (2011). Knowledge dissemination could predict the staff's creativity. This means that, through knowledge dissemination and sharing among various parts of the organization, creativity can largely be promoted among the staff. The use of bulletin boards, newsgroups, internal networks, and emails helps the dissemination of knowledge in the organization, thus allowing the staff to exchange ideas on different topics. For knowledge sharing to improve the performance and creativity of the staff, a desirable culture must exist in the organization; a culture in which the staff respect, trust, and discuss with one another for transferring knowledge.

Significantly positive correlation existed between knowledge storage and creativity (r=0.631, p=0.01). This was consistent with the results of Khazanedar (2016), Moosafi, Safania, and Shirvani (2014), and Poursoltani Zarandi and Iraji (2013). This component of KM ranked the third in terms of the degree of correlation with creativity. Nowadays, information is a major resource in organizations because it is the raw material for human thought which is, in turn, a major factor in the process of creativity and innovation.

Significantly positive correlation existed between knowledge use and creativity in the staff (r=0.622, p=0.01). This component of KM ranked the last in terms of the degree of correlation with creativity. These results were consistent with the results of studies by Baezzat, Aflakifard, and Shahidi (2015), Shahlaee (2014), Poursoltani Zarandi, and Iraji (2013), and Niaz Azari, Barimani, and Hajigholikhani (2011). They express that organizational culture must fortify the use of knowledge and support the effect of KM establishment in the development and generation of knowledge. The creation of an environment of confidence in organizations, in which the staff do not feel threatened by transferring their occupational knowledge to others, as well as establishment of work groups and communication channels for increasing occupational interactions can establish an environment in which people consider themselves a part of the whole, share their occupational knowledge with others to achieve goals, and thus improve each other's performance. Accordingly, it is recommended that a horizontal structure be used between the staff to help in better use of knowledge. Moreover, it must be kept in mind that any knowledge must be used in the appropriate place in order to prevent interference between affairs.

Also, results of the present study showed that significantly positive correlation existed between PE and creativity, with the Pearson's coefficient of 0.609. As a result, the hypothesis was confirmed. This study was consistent with those by Jahani Javanmardi (2016), Hosseini et al. (2016), Qiasi Nodoushan, Jahani Javanmardi, and Khorsandi Taskouh (2016), Azma, Bazvand, and Kamari (2015), Ghanbari (2014), Mahdavi (2014), Amandsen and Martinsen (2015), Ozaralli (2016), Wilson (2015), Spritzer (2014), Liyan et al. (2012), and Zang and Bartol (2010). In its simplest form, empowerment means the re-distribution of power. In practice, however, it is a form of staff cooperation in order to invite their commitment, leading to the development of collaborative decision-making which is a characteristic of innovative and creative organizations. One of the most general experimental principles of empowerment is the compatibility between the level of responsibility and freedom, making the organizational structure more flexible, which is another feature of innovative and creative organizations. Another feature of creative organizations is to teach problem-solving in a creative way to the staff, leading to a sense of competency, significance, and self-acceptance of the outcomes of one's actions (sense of effect) in the staff as the components of empowerment. Another feature of empowered people is creativity; they are not satisfied with the status quo because this dissatisfaction leads to creativity which is the main source of improvement in people, organizations, and society. Today, organizations need effective and efficient employees in order to obtain their goals of growth and development. In general, organizational efficiency and effectiveness depend on the efficiency and effectiveness of the human force in them. Therefore, moving towards PE and having creative and hard-working human resources are the main responsibilities of organizations.

Today, organizations need effective and efficient employees in order to obtain their goals of growth and development. In general, organizational efficiency and effectiveness depend on the efficiency and effectiveness of the human force in them. Therefore, moving towards PE and having creative and hard-working human resources are the main and essential responsibilities of organization. Results of research shows that empowerment increases the staff's motivation; increasing staff power leads to increased self-efficiency. The staff can use their creativity to select the method of performing tasks (Deft, 1998). Therefore, PE is a variable affecting the staff creativity. The model proposed here had the independent variable of KM, dependent variable of creativity, and mediating variable of PE. By placing the model in the software and after modeling, it was found that no significant relationship existed between PE and creativity. In fact, PE did not mediate between KM and creativity. In this model, the relationship between KM and EP was 0.86; i.e. KM explained about 73% of the variance of PE. Moreover, the relationship between KM and creativity was 0.78; i.e. KM explained about 61% of the variance of creativity. Nevertheless, PE did not explain the variance in creativity. Indeed, PE had a significantly positive relationship with creativity on its own and outside the model, but this relationship was not confirmed in the model. As expressed before, KM and PE as well as KM and creativity had positive correlation, but PE did not have significant correlation with creativity while taking into account KM. In other words, PE and creativity had significantly positive correlation, but when the component of KM was considered together with them, the relationship between them was no longer significant. This finding was inconsistent with the results reported by Salehi Sadighani and Dehghan (2008), Gharli Ronizi (2009), Abesi and Kord (2009), Jarahi (2010), Seyed Naqavi and Abbaspour (2010), Golparvar, Padash, and

Atashparvar (2010), Allahyari (2010), Nazemi (2010), Webster (2005), Ozbiligin (2006), Zang and Bartol (2010), and Azlin, Rohaida, and Zainal (2011). This result might be explained by the point that the majority of staff at departments of education in Qom Province belonged to an older age range and had low self-efficiency and motivation for increasing their PE. As a result, they were not willing to express creativity. Thus, if competent, elite, and creative youth are employed at different managerial and administrative levels, this problem can partly be solved. Another explanation is that the staff's position does not fit their expertise, major, interests, and competency. As a result, the process of development of the talented and emergence of creativity will be difficult. Thus, we propose that people be employed for different positions with regard to their expertise, majors, interests, and competencies. Another explanation is the lack of importance attached by today's society to creative, innovative, and elite employees. This can be solved if the staff's new and creative ideas and thoughts are used, encouraged, and rewarded by their superiors. Another possible reason for this finding is the measurement instrument used in this research. All the data in this study were collected in the self-report format. A major problem with this method of data collection is controlling the social desirability bias. In other words, in self-reports, participants select an option which represents them the best, rather than an option which expresses their status quo most accurately. This decreases the efficiency of the measurement instrument. The use of multiple evaluation methods is suggested to overcome this problem. Another explanation for this finding may be the respondents' lack of understanding or misunderstanding of the items in the questionnaires. This problem can be solved via further monitoring by the researchers over the process of research. This study was based on a sample of staff at departments of education in Qom Province, which can limit the generalizability of results. Conducting research in other cities, provinces, and organizations can solve this problem to some extent. This study was conducted on 200 employees and this sample size was small for modeling. Finally, in this study, the relationships between variables were observed. Therefore, an experimental study is required to provide a deeper insight into the relationship between PE and creativity.

In conclusion, if people in organizations are competent enough and increase organizational efficiency, they can pave the way for the emergence of creativity and flourish the staff's talents and creativity. Furthermore, the existence of knowledge in organizations is a must for the enhancement of creativity, and management of the knowledge existing in the organization can affect individual and organization creativity just like PE, thereby leading to empowerment. Thus, people can be empowered by collecting and managing knowledge. Paying attention to KM in organizations leads to intrinsic motivation in the staff, thereby empowering them. Managers must develop basic strategies for the governance of KM in the organization. The existence of a powerful KM system in offices leads to synergy between the staff and generation of knowledge. Employing knowledge-based managers and officials in high-ranking positions can accelerate changes for the establishment of KM in the organization and supporting knowledge-based staff. To empower the staff of any organization, the managers must first be aware of their capability enhancement. In fact, self-empowerment is the pre-requisite for empowerment. This enhances the culture of empowerment in the organization. Managers must play a facilitating role and provide the conditions for the empowerment of the staff using managerial skills and strategies. Managers must attempt to fortify and develop the teaching of creativity using effective strategies.

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