Studying the relation between components of knowledge management and employees’ creativity (Case study: Sistan and bluchestan provincial government organization)

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ABSTRACT

The purpose of this study is to determine the relation between different components of KM and employees’ creativity. The statistical population is consisted of the employees of central staff and deputy departments of Sistan o Baluchestan provincial government that equals 350 persons, and using Morgan table a number of 180 persons is determined as the statistical sample size. The data is gathered by the use of two standard surveys of KM and employees’ creativity. The data id analyzed with SPSS19 software and using appropriate statistical methods such as Spearman’s correlation coefficient, one sample T test, and stepwise regression. Results of this study indicated a positive and significant relation between KM and its different dimensions and employees’ creativity. According to the regression table, among the main components of knowledge management, collection has the strongest effect on employees’ creativity.

KEY WORDS: knowledge management, KM, knowledge collection, knowledge dissemination, innovation, creativity

INTRODUCTION

In today’s world customers’ demands are changing constantly and the organizations must adapt themselves to that change. To survive in the competition of the modern world the organizations should employ modern knowledge in their structures and turn that into products and services [Za’farian et al. 2008]. To attain this goal the organization’s internal knowledge must be managed. In turbulent and complicated environment of modern era, the role and importance of knowledge in an organization’s performance is a matter that cannot be overlooked. Organizations that know how to attain, distribute, and manage the information effectively would be the leaders in their own field of commerce. Today, gaining privilege in competition cannot happen by mere attainment of information, and knowledge is what helps organizations in obtaining that goal [Davenport, 1997]. To deal with risks and environmental uncertainty, to maintain position and developing innovations that help stay in competition, the managers in this modern era should exploit the advantages that knowledge provides. Hence, taking knowledge management into consideration can be a strategic instrument for organizations to expand their capital, encourage innovation and creativity, and reach the desired performance [Jafari Moghadam: 12, 2003]. The increased interest in studying and application of knowledge management to create and maintain competitive privileges is itself a testimony to the increasing importance of knowledge management for organizations since they strive to survive in global economy by turning into a learning organization (LO) [Binder & Fisch, 2003]. Therefore it is of particular importance to consider knowledge management in modern organizations [Mc. Adam & Leonard, 2001]. The present research studies the relation between components of knowledge management and employees’ creativity in Sistan and bluchestan provincial government.

2- Hypothetical framework:
2-1- Knowledge management:

According to Marwick, knowledge management is a set of systematic organizational activities aimed to achieve higher values via the available knowledge. The available knowledge includes all the learning and experiences of employees and all the documents and reports inside an organization [Marwick, 2003].
Knowledge management is a process through which an organization produces wealth by the use of knowledge, or its intellectual resources [Morine & Terziovski, 2004]. Specter & Edmonds (2002) define knowledge management as a process that helps organizations discover, select, organize, and distribute important information and knowledge. They see it as a crucial skill in activities such as problem solving, dynamic learning, strategic planning and decision making [Shahbazi, 2007]. Bukowitz defines knowledge management as a process through which an organization creates capital using thoughts and knowledge of its members and its intellectual properties [Chang Ming Yu, 2005]. According to Davenport and Prusak (1998), knowledge management is to operate and expand the intellectual resources of an organization in order to achieve its goals. The knowledge being managed includes both tacit and explicit knowledge. Newman and Conrad (1999) proposed a framework model for knowledge management that is one of the two prevalent models offered by international co-operative forum of knowledge management (ICFOKM) [Haghighat & Houshiar, 1389].

![Fig. 1: Newman & Conrad knowledge management framework model.](image)

A) **Knowledge Creation:** Knowledge creation refers to the ability of an organization to create new and useful ideas and solutions [Marakas, 1999]. Knowledge creation is an important procedure in which, motivation, inspiration, experience, and chance play a significant role [Linn et al., 1996]. The criterion for evaluation of new knowledge is its effectiveness in solving current problems and innovation in the market. There are different ways to re-evaluate experiences. For example any organization can restore a part of existing knowledge by the use of imitation, repetition, and replacement strategies. In some cases an organization can improve its capabilities by relying on its own merits and reducing the inefficiencies. By further development of research section and application of modern technology, an organization can strengthen foundations of its knowledge [Butt, 2000].

B) **Knowledge Retention:** It includes storing, maintenance, and updating the knowledge and prevents it from destruction and waste, and enables exploitation of that knowledge [Litras et al., 2008]. It includes all activities that preserve knowledge and allow it to remain in the system once introduced. For that purpose, organizational memory is an issue that is most emphasized by experts. It is the organization’s ability to store and maintain the knowledge. If organizations seek effective management of knowledge, developing and use of organizational memory by itself is not going to be enough. Experts also emphasize on individual memory. It is the most important source of implicit knowledge. Knowledge management will be useful and effective, only if these two types of memory work together and reinforce each other.

C) **Knowledge Sharing (dissemination):** Dissemination and sharing knowledge is the most basic function of knowledge management [Nadjafi, 2011]. The purpose of knowledge sharing can be creation of new knowledge by incorporation and combination of the existing knowledge or by making better use of it. In order to develop an effective knowledge sharing process the individuals need to be willing and highly capable. The studies indicate that when employees are willing to share their knowledge, the process starts and spreads automatically. People share their knowledge because the want their experiences to be appreciated and practiced by others. Yet they need to be completely convinced that knowledge sharing is an essential matter [Mousakhani et al., 2013].

D) **Knowledge Utilization:** It includes the activities connected with the application of knowledge by the organization. Incorporating the ideas of employees into organizational procedures or selling organizational knowledge, are among such activities [Salehi Sedghiani & Kheirandish, 2004; Abtahi & Salavati 2006:48]. Mere knowledge is worthless. It will be valuable if only it can be put to use. No one appreciates a scientist who does not use his knowledge. Organizational knowledge in general must be applied for use in services,
procedures, and production. If an organization fails to recognize appropriate knowledge in appropriate position, it will have problems in keeping up with the competition. In a time and era when innovation and creation in the means to victory, organizations must make haste in their endeavor to find true knowledge in its proper form [Haghighat Monfared & Houshiar, 2010].

2-2- Creation:
In Arabic language, the word creativity is translated as “خلق” which is derived from the stem word “خلق”, meaning “to create”. In Dehkhoda dictionary it is defined as creating and begetting, and a creative person is defined as one who has new ideas. According to Webster dictionary creativity is the power and ability to create new ideas or applying them in new forms by use of mental and intellectual capabilities [Sam Khanian, 2005: 15]. Creativity is the ability to exploit knowledge to solve problems and to innovate. It is not always about coming up with new ideas, it can be transferring the existing knowledge to new situations and putting it in a different framework; it could be linking and inter-connecting ways and methods that didn’t previously exist [Callejon et al. 2010]. Creativity has been studied in different perspective by philosophy, science, social psychology, neurology, psycho evaluation, and ecology. Creativity is the process of interacting with environment; the environment stimulates the individual physically and socially, thus reinforcing creativity in them. Creativity gives the organizations advantages in the competition, so they also compete with each other in developing creativity among their employees. Among these organizations, educational system has announced creativity as its official goal and objective and strives to establish a creative organization. Considering the importance of motivating individuals to establish creativity in the educational system, knowledge management can provide the proper stimuli to achieve this purpose [Whitham & Roy, 2009].

2-3- Characteristics of creative people:
Nowadays the presence of creative people in organizations is noticed more than before. Modern and complex organizations must be founded on new ideas, and in order to survive and flourish, they must rely on innovative methods and inquisitive spirits. It should be noted that creativity does not emerge in an organization all by itself. For that to happen, individuals in the organization should have certain qualities. Some scientists believe that creativity is exclusive to the genius individuals who contribute to a major part of creativity that occurs. In his book, Torrington says that most of raw ideas that lead to innovation are produced by few individuals in an organization [Amabel, 1979]. Most of scientists on the contrary, believe that creativity and innovation is not exclusive to certain individuals and any person can be creative. They explain that no matter what organizational level or vocational position an individual holds he is still capable of creativity, though, and contemplation [Haghighat, 2001]. Also some schools of thought believe that creativity can be taught and learnt [Haghighat, 2001; Tang, 1998]. Scientists have always tried to determine the characteristics of those capable of creativity. Among those scientists, Steiner has conducted wide and comprehensive researches in order to determine the quality and specifications of creative individuals. In 1962, the results of his studies indicated that creativity is not related merely to intelligence. As his studies demonstrated, while having a high IQ is necessary for being creative, in some instances it simply is not. Additionally, almost in every case of study there were very intelligent individuals that were not creative. In comparison to other people:
A) A creative person does not often insist that something is absolutely right or wrong.
B) Does not consider something certain and evident. Instead of absolute presupposition, he prefers relative thinking.
C) Demonstrates independence in his judgment.
D) Not only does he not try to always behave reasonably, he often acts based on his feeling and emotions.
E) Does not take himself too seriously and is capable of laughing at himself [Sadjadi, 2004].

4- Literature:
The results of the study by Nayyer & Jokar (2011) to determine the relation between KM and creativity among the librarians od Shiraz university library indicated that there is a positive and significant relation between KM and creativity, wherein correlation coefficient is 0.261 and the level of significance equals 0.03 . The results of the study by Baladihi & Mirzayi Arabi (2014) to determine the relation between KM and creativity among the employees of Mazandaran province police headquarters indicated a significant relation between KM and employees’ creativity. There was also a positive and significant correlation between employees’ creativity and components of knowledge management that are creation, acquisition, organization, storage, distribution, and utilization. The results of the study by Yousefi et al. (2012) to determine the role of KM in innovation among the companies in the university of Orumia’s science and technology park indicated a significant relation between KM and innovation (product, process, gradual, and fundamental). Therefore increasing concern with knowledge management in most of organizations will lead to increase among their employees. Another research in 2011 aimed to study the relation between KM and creativity among librarians of Shiraz University library. The results indicated a positive correlation between KM and librarians’ creativity.
Another result was the correlation of individuals and KM culture with creativity. However no significant relation between technology and librarians’ creativity were recorded. Another research was conducted by Jourabchi (2008) with the purpose of studying the effect of KM on performance of high school teachers in the city of Tehran, and the results were as follows. Knowledge exploration, classroom team work, and the use of technology had a significant relation with the teachers’ performance. In a research titled “the relation between structure and culture, and knowledge management in the ministry of labor and social affairs”, Asgari (2005) studied the relation of the two factors of structure and culture with factors of knowledge creation and knowledge transfer inside ministry of labor and social affairs. The results indicated that there is a significant relation between the mentioned organizational elements and knowledge management in the ministry of labor and social affairs. Samadian & Alavi conducted a study titled “the effect of knowledge management on creativity of employees in Tehran province radio and television organization”. The results demonstrated that knowledge sharing, knowledge organization, knowledge utilization, knowledge evaluation, and knowledge exploration, and creation had an influence on the creativity of employees. In an article titled “the role of tacit knowledge management in creativity and innovation”, Fathian et al. confirm the positive effect of tacit knowledge on organizational creativity and innovation. They believe that as an organizational asset and an element of success, tacit knowledge plays an important role in stimulating creativity and innovation. In their research, by management of innovation, that role in can be determined via a pattern considering the type of industry, the structure of the organization, and the required creativity, thus optimizing the achievement of creativity [Fathian et al. 2005]. In their article titled “knowledge management: a new indicator of innovation”, Mortazavi & Mahdian (2004) state that current theories present a larger insight into the process of innovation, and it is believed the research and development are merely one of the inputs that help produce wealth and social benefits inside a complex economical-social system. Knowledge management is another influencing element that has recently attracted the attention of experts of the matter. In their paper titled ‘yesterday’s librarians and today’s knowledge managers’, Toroghi & Pappi (2006) study the means of knowledge exchange and the methods of knowledge transfer; they emphasize on the importance of library science and information in recognition of knowledge and its evaluation, organization, and storage in order to increase collective knowledge and improve the initiative and innovation in organizations. Considering the presented research literature, the Newman & Conrad (1999) KM framework model is used for different components of knowledge management.

Fig. 2: Research concept model.

2-5- Research hypothesis:
1- There is a significant correlation between knowledge management and creativity among employees of Sistan and bluchestan provincial government.
2- There are significant correlations between components of knowledge management and creativity among employees of Sistan and bluchestan provincial government.
3- Research methodology:

The present study is an applied research that uses a descriptive-survey method. The statistical population includes all the employees of Sistan o Balouchestan provincial government that is consisted of 350 persons. Using the Morgan sampling table, a number of 180 persons are selected as the statistical sample.

1-3- Data collection tools:

1- Employees’ creativity questionnaire: Randsip’s standardized creativity questionnaire (1988) is consisted of 17 questions that are answered on a Likert scale (strongly agree, agree, neutral, disagree, strongly disagree). To measure the answers a 1to5 scale has been used.

2- Knowledge management questionnaire: this questionnaire is consisted of 33 items and aims to evaluate aspects of knowledge management (knowledge creation, knowledge capture, knowledge dissemination or sharing, knowledge utilization, and knowledge storage) in the organization. Likert scale is used for the purpose of measurement.

Also the participants were asked to write down certain information such as their age, gender, education, and their military service situation. The questionnaires’ reliability has been tested using Cronbach’s alpha. The measure of Cronbach’s alpha for each questionnaire is listed in table 1.

<table>
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<th>Table 1: Cronbach’s Alpha for questionnaires’ reliability.</th>
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<td>Cronbach’s Alpha</td>
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4- Research findings:

In order to examine the relation between knowledge management and employees’ creativity, Spearman’s correlation test has been used.

Primary hypothesis: there is a significant correlation between knowledge management and creativity among the employees of Sistan and bluchestan provincial government.

<table>
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<th>Table 2: Spearman’s correlation coefficient between knowledge management and employees’ creativity.</th>
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<tr>
<td>Employees’ creativity</td>
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<tr>
<td>Knowledge management</td>
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As demonstrated in table 2, with the null hypothesis level of significance p<0.05, the correlation coefficient between knowledge management and employees’ creativity equals 0.775 which is statistically significant, i.e. there is a significant correlation between these two variables.

Secondary hypothesis: there are significant correlations between components of knowledge management and creativity among the employees of Sistan and bluchestan provincial government.

H0: there is no significant relation between components of knowledge management and employees’ creativity

H1: there is a significant relation between components of knowledge management and employees’ creativity.

<table>
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<th>Table 3: Pearson’s correlation coefficient between components of knowledge management and employees' creativity.</th>
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<tr>
<td>Variables</td>
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<td></td>
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<tr>
<td>Knowledge acquisition</td>
</tr>
<tr>
<td>Knowledge capture</td>
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<tr>
<td>Knowledge sharing/dissemination</td>
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<td>Knowledge creation</td>
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<td>Knowledge utilization</td>
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According to table 3, the obtained correlation coefficient between components of knowledge management and employees’ creativity demonstrates a significant relation between components of KM and creativity variable. Therefore the null hypothesis is rejected and the research hypothesis (i.e. there is a significant relation between components of knowledge management and employees’ creativity) is confirmed. However, to determine the degree to which these factors have an impact, and to determine which factor has the greatest impact, multiple regression test is used. In other words, stepwise regression is used to determine the effect and explanatory level of the variables in this study.

Table 4 demonstrates that considering the size of F statistic and the level of significance that is less than 0.05, the linearity of the research model is confirmed. Also the regression coefficients are interpreted based on Beta coefficients, since the size of standardized regression coefficient indicates the effect of the independent
variable on the dependent variable, and by means of that the portion and strength of each independent variable in the model can be determined.

Table 4: Components of knowledge management and employees’ creativity stepwise regression.

<table>
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<tr>
<th>Model</th>
<th>Coefficient of multiple correlation (R)</th>
<th>Coefficient of determination (R²)</th>
<th>F</th>
<th>Beta</th>
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<tr>
<td>K acquisition</td>
<td>0.677</td>
<td>0.458</td>
<td>137.90</td>
<td>0.776</td>
<td>0.000</td>
</tr>
<tr>
<td>K acquisition + K creation</td>
<td>0.746</td>
<td>0.556</td>
<td>101.60</td>
<td>0.483</td>
<td>0.369</td>
</tr>
<tr>
<td>K acquisition + K creation + K utilization</td>
<td>0.778</td>
<td>0.602</td>
<td>82.26</td>
<td>0.403</td>
<td>0.282</td>
</tr>
<tr>
<td>K acquisition + K creation + K utilization + K capture</td>
<td>0.788</td>
<td>0.624</td>
<td>65.36</td>
<td>0.324</td>
<td>0.252</td>
</tr>
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</table>

Therefore, the most important factors in knowledge sharing/dissemination are knowledge acquisition (0.324), knowledge creation (0.252), knowledge utilization (0.255), and knowledge capture (0.175) respectively. On this basis, the employees’ creativity regression equation is as follows.

$$\text{Employees’ creativity} = \text{knowledge acquisition} (0.270) + \text{knowledge creation} (0.198) + \text{knowledge utilization} (0.255) + \text{knowledge capture} (0.175).$$

5- Conclusion and discussion:

Considering the research primary hypothesis, with the level of significance $P<0.05$, there is a positive and significant relation between knowledge management and creativity among the employees of Sistan and Bluchestan provincial government. This indicates that according to the employees, as the grade of knowledge management increases, the creativity improves. In a study of the relation between organization knowledge management and creativity among the members of Isfahan university scientific circle, Rahimi (2012) found that there is a positive and significant relation between knowledge management and creativity of the members of the scientific circle. This corresponds to the results of the present research. It also corresponds to the results of the research by Baladehi & Mirzayi Arabi (2014) who studied the relation between knowledge management and the employees’ creativity (case study: Mazandaran province police headquarter). Also the results of the secondary hypothesis examination indicated a significant correlation between components of knowledge management and creativity among the employees of Sistan and Bluchestan provincial government. These results also correspond to the findings of other researchers such as Nonaka (1995), Rahimi (2007), yousefi et al. (2011) and Ahmadi Bladehi & Mirzayi (2014).

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