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The role of information technology in successful knowledge management (Case study: Tehran's physical education college)

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ABSTRACT

The purpose of this study is to investigate the role of Information Technology in Successful Knowledge Management in Tehran's Physical Education College. The research method in this study was Descriptive and correlation method. Statistical population of the study is all members of the Faculty of Physical Education college in Tehran (N=130) in 2012 (Islamic Azad Universities and National Universities) that 111 patients were selected as subjects. There were two questionnaires used for data collection including Information Technology (12 questions) questionnaire And Knowledge Management (18 questions) questionnaire. Descriptive and inferential statistics methods for data analysis were used. The findings showed that between Information Technology and Knowledge Management from the faculty' perspective, there is significant positive correlation (r=0.436, P≤0.001). The research findings on the importance of IT as one of the factors affecting KM in Tehran's Physical Education Faculties underlined. Thus, it is recommended that requirements for improving knowledge management be provided.

Keywords: Information Technology, Knowledge Management, Physical Education Faculties

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INTRODUCTION

Twenty-first centuries is called fast changing world. The name is ascribed to the era because of globalization effects, technologic developments, and the role of modern science in human life and demographic characteristics of different nations [1].In this regards, there is currently a compelling debate about the changing nature of business environments and the sources of competitiveness in advanced economies. It is asserted that knowledge is fast overtaking capital and labor as the key economic resource in advanced economies [2]. The intangible assets in an organization are widely celebrated as vital elements in improving competitiveness [3, 2]. This has compelled academics and practitioners to discuss the way in which knowledge assets are managed; thus knowledge management (KM) is emerging as a significant concept in management science. KM has been extolled as “one of the major driving forces of organizational change and wealth creation” but remains a source of ambiguity, both theoretically and practically [4].

Knowledge management has emerged as a discrete area in the study of organizations and is frequently cited as an antecedent of organizational performance. If organizations implement knowledge management practices successfully they are able to perform intelligently to sustain their competitive advantage by developing their knowledge assets [5]. Thus, it is essential to know how to generate knowledge, how to disseminate it in the organization and what factors facilitate these processes [6].

In recent years, several researchers have associated knowledge management with the development of information and communication technologies, (ICT) [7,8]. The new technologies are characterized by their capacity to influence the traditional ways of understanding certain organizational phenomena and behaviors and affect how organizations

tackle the challenges thrown up by the knowledge society [9]. Researchers have gone from studying the effects of ICT on economic-financial variables to studying its complementarities with intangible resources such as knowledge [10]. But it is not clear how the relation between IT competency and knowledge management works. Empirical work in this area is lacking [11]. Given that advances in information technology (IT) have made it easier to acquire, store, or disseminate knowledge than ever before, many organizations are employing IT to facilitate sharing and integration of knowledge. But considering the complexity of KM initiatives and the variety of IT solutions available on the market, executives must often confront the challenging task of deciding what type of IT solutions to deploy in support of their KM initiatives [12].

There are two basic approaches to KM for which IT can provide support: codification and personalization [13]. With the codification approach, more explicit and structured knowledge is codified and stored in knowledge bases. The main role of IT here is to help people share knowledge through common storage so as to achieve economic reuse of knowledge. An example of such IT tools is electronic knowledge repositories. With the personalization approach, more tacit and unstructured knowledge is shared largely through direct personal communication. The main role of IT here is to help people locate each other and communicate so as to achieve complex knowledge transfer. Examples of such IT tools are knowledge expert directories and video-conferencing tools. Both these KM approaches are fundamental to understanding the role of IT in KM [14]. In addition, IT facilitates the process of knowledge transfer. Technology enables individuals to coordinate the logistics of face to face meetings. It can also be used to catalogue expertise of organizational members and a result facilitating access to the right people and enhancing knowledge sharing [15]. Certain systems (e.g., groupware or collaborative systems) provide a virtual space where the participants can process the information and knowledge in real time, giving them more chance to interact [16]. Exchange spaces become the ideal place to develop innovative and creative behaviors around problems and situations. One of the most important characteristics of these exchange spaces and virtual communities is that they are founded on the democratization of knowledge, so they enable the appearance of natural flows of transference and collaboration and consequently favor creativity and innovation [17]. On other hand, IT supports the process of knowledge codification and storage. IT facilitates the standardization and automation of certain tasks, supporting the transformation of tacit knowledge into explicit knowledge. Similarly, IT also provides the necessary mechanisms to codify and store knowledge. In order to be useful, however, knowledge stores must be accessible to firm members and must be in a form that will enable each member to interpret in a similar manner, thereby becoming a part of the whole firm's knowledge base. IT, with its protocols and platform standards, provides an ideal mechanism for connecting widely dispersed individuals via a common system and enabling firm members to access more easily the knowledge that is stored in memory bins, so that new information can be interpreted and synthesized with existing knowledge [18].

Institutions of higher education engaged in teaching and research are now seen to occupy an important place in the knowledge production and knowledge transfer systems that are directly related to innovation and in capitalizing on their knowledge assets (research publications, processes and products and research output) contributing to economic progress, and aiding in regional development and so on. According to the role of universities in knowledge production, Physical education universities are also important. Science products offered in sport by universities have led to a great revolution in the sports industry. Sure prepare scientific knowledge in this field can help to improve and further develop the sport. Therefore, the main objective of this study is to investigate the role of information technology in successful knowledge management in Tehran's Physical Education faculties.

MATERIALS AND METHODS

Method: In view of the goal, the research is applied (functional), and in view of methodology, this research has descriptive, correlation method which was performed by field approach.

Statistical Population and Sampling: Statistical population of the study is all members of the Faculty of Physical Education college in Tehran (N=130) in 2012 (Islamic Azad Universities and National Universities). For the determination of sample size, stratified random sampling method and Morgan Table were used. Based on a sample size, 111 patients were selected as subjects.

Instrument (s): For collecting data, two questionnaires were used, Information Technology developed by *Haji Anzehaie and Bai* (2012) with 12 questions that have closed answer and Knowledge Management Questionnaire developed by *Haji Anzehaie and Bai* (2012) with 18 questions that have closed answer. The Information Technology questionnaire has two subscales: Support Technology and Cognitive Technology. The content validity of the questionnaires was approved by five professors of sports management. To calculate the reliability of the questionnaires, a pilot study was conducted. The results showed a reliability coefficient of α=0.78 for Information

Technology Questionnaire and α=0.84 for Knowledge Management Questionnaire, which indicated the consistency of measurement.

Data Analyses: SPSS (Ver 16) software was used to analyze the data. At the level of descriptive statistics, statistical parameters such as the frequency, sum, mean and … were used. At the level of deductive statistics, *Kolomogorove Smirnove* (K-S) test was used to study the normality of data and regarding to the normality of data and in order to examine the relationship between the variables; Pearson's correlation coefficient test was used.

RESULTS

After distributing the survey questionnaires (N=111), finally 102 questionnaires were returned. The results showed that subjects were 73 male and 29 female. Results showed that 50 percent of respondents have work experience from 1 to 15 years and 50 percent have work experience from 16 to 30 years.

Table1. Description of Information Technology and Knowledge Management based on faculties' opinions

Statistic / Variables	Mean	Std. Deviation
Support Technology	3.84	0.494
Cognitive Technology	4.26	0.468
Information Technology	4.12	0.476
Knowledge Management	4.38	0.494

As shown in Table 1, the mean of Support Technology score was 3.84 and Cognitive Technology score was 4.26. Maximum Information Technology score was found to be 4.12 out of 5, which indicates that the Information Technology medium is higher than average. Maximum Knowledge Management score was found to be 4.38 out of 5.

Table2. Result of Kolomogorove Smirnove test to verify data normality

Statistic / Variable	N	Z	Sig	Test result
Information Technology	**102**	**1.277**	**0.77**	**Normal data**
Knowledge Management	**102**	**1.255**	**0.103**	**Normal data**

To test if data were normally distributed the *Kolmogorov-Smirinov* Test was used. Results in Table 2 show that Information Technology data (Z=1/387, p=0/543) and Knowledge Management data (Z=0.908, P=0.624) are normal.

Table3. Relationship between Information Technology and its subscales with Knowledge Management

Variables	Knowledge Management			
	N	r	P	r^2
Support Technology	**102**	**0.392**	**0.001**	**0.15**
Cognitive Technology	**102**	**0.486**	**0.001**	**0.24**
Information Technology	**102**	**0.436**	**0.001**	**0.19**

Pearson correlation formula was run to examine the relationship between Information Technology and Knowledge Management in Tehran's Physical Education Faculties. Regarding the results in Table 3, there is a positive and significant relationship between Support Technology and Knowledge Management (r=0.392, P≤0.001). Also, the results of correlation coefficient shows that there is a positive and significant relationship between Cognitive Technology and Knowledge Management from the faculties' perspective (r=0.486, P≤0.001) [Table. 3]. In addition, there is a positive and significant relationship between Information Technology and Knowledge Management from the faculties' perspective (r=0.436, P≤0.001) [Table. 3]. Also 19% of the knowledge management changes by Information Technology are explained.

DISCUSSION AND CONCLUSION

Knowledge is increasingly being recognized as a vital organizational resource that provides competitive advantage. Managing knowledge assets can be a challenge, especially in the Educational institutions, where a vast amount of new knowledge produced by these institutions. The role of information technology (IT) in knowledge management (KM) is an essential consideration for any organization wishing to exploit emerging technologies to manage their knowledge assets.

Results showed that there is a significant and meaningful correlations between information technology and knowledge management (see Table 3). Thus, the strength of the correlations obtained in the present research suggests that the overall information technology and its sub-scales have a significant role in knowledge management. This finding is consistent with the findings of *Egbu* (2000), *Duffy* (2001) and *Perez Lopez et al* (2009) [3, 9,11]. Compared to the situation last decade ago, IT is becoming more sophisticated and is being recognized among Educational institutions as a useful and effective tool for KM. The Internet and corporate intranets are especially commonplace in such environments, for the effective acquisition and transfer of knowledge and information. However, despite greater availability of more sophisticated IT, such as Groupware and Knowledge maps, perceptions about more conventional techniques for acquiring, developing and applying knowledge, such as telephone and face-to-face interaction, seem unchanged. There are, also, difficulties associated with investing time and money in educating employees about the potential benefits of IT to their working patterns. People tend to prefer familiarity over change and incorporating new technologies into the workplace takes time and effort. It is recommended that managers recognize the benefits of IT and implement changes according to the specific organizational requirements. Such implementation must be accompanied by sufficient training and education for staff to ensure that IT is being used effectively.

Since physical education colleges have an important role in the production of knowledge and the promotion of sport, the IT infrastructure required to appear in these places. Thus the following suggestions are offered:

- Features of the IT software and hardware are provided.
- About new Information technology, faculty should be trained.
- Databases must be provided for faculty.

Some limitations should be kept in mind when interpreting the current findings. First, the correlational design used in the present study does not allow us to infer causal inferences. Therefore, it is impossible to determine the directionality of causality with respect to the proposed model. Consequently, researchers should try to replicate the present findings using experimental designs in order to clearly establish the directionality of effects. Second, the present study performed in Physical Education faculties. It is recommended that same research perform in other educational institutions and the results are compared.

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