



Examining the Role of Technological Factors in Faculty Knowledge Sharing Behavior

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ABSTRACT

Role of technology is crucial in knowledge management especially in facilitating and accelerating communications among employees. The purpose of this study was to investigate the relationship between technological factors and faculty knowledge sharing behavior. Following Pearson correlation analysis data collected from faculty members teaching management discipline in universities in UAE was analyzed. The analysis shows that there is a significant positive relationship between technological factors and actual knowledge sharing behavior of faculty members. Perceived usefulness of technology has the greatest influence on faculty knowledge sharing behavior, followed by technology usage and technology support and infrastructure.

KEYWORDS : Knowledge management, technology, knowledge sharing behavior, faculty

I Introduction

In today's highly globalized market environment, organizations place a high premium on knowledge. Knowledge management (KM) is critical to capture and leverage a firm's knowledge resources. A successful KM implies a good combination of both human participation and IT collaboration tools. Effective implementation of KM depends on several factors ranging from individual factors to organizational and technological factors (Lee and Choi, 2003; Connelly and Kelloway, 2003; Taylor and Wright, 2004, Riege 2005). Being a knowledge intensive organization, universities and higher education institutes have an enormous scope to develop and implement KM initiatives to create pro-knowledge sharing environment to achieve academic excellence.

Purpose & Significance of the study:

This study basically attempts to explore the role of technological factors in influencing faculty knowledge sharing behavior.

- To determine the influence of perceived usefulness of technology on knowledge sharing behavior of faculty members
- To investigate the relationship between technology availability and knowledge sharing behavior
- To identify the relationship between technology usage and actual knowledge sharing behavior

II. Review of Literature

Technology is defined as material artefacts such as software and hardware used to perform duties in organization (Orlikowski, 1992). The process of knowledge sharing could take place either through technology-mediated channel or non-technology mediated channel (Lee & Al-Hawamdeh, 2002). Technology mediated channel could be in the form of video-conferencing, newsgroup, groupware, virtual team rooms, e-mail, voicemail, etc. (Lee & Al-Hawamdeh, 2002). Thus, the reliability of technology is paramount for knowledge sharing (Lee & Al-Hawamdeh, 2002) because it has become a facilitator for knowledge transfer (Roberts, 2000)

The computer plays a crucial role in knowledge sharing. Right Information and Communication Technology (ICT) infrastructure would not only facilitate the knowledge sharing but also support the creation, storage dissemination and usage of knowledge (Daven Port & Prusak, 1998, Song 2002) and could increase technological motivation to share knowledge (Hendriks, 1999). The effectiveness of knowledge management depends on the readiness of employees to share knowledge through computers that can be accessed by all employees in the organization (Syed Ikhshan & Rowland, 2004). Employee usage of IT applications (Kim & Lee 2006; Lu et al 2006, Meenakshi 2002) and user friendly IT systems (Kim & Lee 2006) found to have positive influence on sharing of knowledge.

A number of studies have been conducted to identify technology-related factors that affect knowledge sharing behavior. According to Riege.A.(2005) some of the potential technological barriers that hinder people from sharing knowledge are:

- Lack of integration of IT systems and processes which impedes the work.
- Lack of technical support (internal and external) and maintenance
- Unrealistic expectation what technology can do and cannot do.
- Lack of compatibility between diverse IT systems and processes
- Reluctant to use information technology because of not familiar to.
- Lack of training to familiarize with new information technology systems and processes.
- Lack of communication of relative advantages of new system over existing system.

III Materials and Methods

For this descriptive-analytical survey, data has been obtained from faculty members teaching management discipline in universities in UAE. 60 questionnaires were distributed, out of which 40 valid responses were returned, yielding 66.67% response rate. The questionnaire was designed into two sections. The first part of the questionnaire was related to demographic information. The second section of the questionnaire comprised 16 scale items designed to measure the technological factors influence on knowledge sharing behavior. A seven-point Likert-type scale (ranging from 1 = strongly disagree to 7 = strongly agree) was used. The reliability of the scale items was tested by Cronbach alpha (see Table1) which shows high internal consistency of variables. Descriptive statistical analysis, correlation analysis has been performed using SPSS19 to determine the relationship between technological factors and faculty knowledge sharing behavior.

Table1. Analysis of Internal Consistency

Variables	No. of Items	Cronbach's Alpha
Perceived Usefulness of Technology (PUT)	4	0.886
Technology Availability (TA)	4	0.923
Technology Usage (TU)	4	0.942
Knowledge Sharing Behavior (KSB)	4	0.754

IV Data Analysis

In terms of gender, 60% of the respondents were female compared to 40% male faculty members. 35% of the respondents were doctorates while the remaining 65% hold master's degree. 50% of the respondents have 5-10 years of teaching experience, followed by 30% less than 5 years and 20% have over 10 years of experience. 50% of the respondents are Assistant Professor while, 30% are Associate Professor and 20% are Professor.

To investigate the relationship between the independent variables and knowledge sharing behavior, the Pearson correlation test was used (Table2). The analysis shows that there is a significant positive

relationship between technological factors and actual knowledge sharing behavior at one percent level. The correlation coefficient for PUT is the highest ($r = 0.646$) indicating the strongest correlation between perceived usefulness of technology and actual knowledge sharing. There is a significant relationship between technology usage and KSB ($r = 0.515$) and technology availability and KSB with the correlation coefficient of 0.428.

Table2 Correlation of technological factors and knowledge sharing behavior

Variables	Pearson Correlation	N	Sig
Perceived Usefulness of Technology(PUT)	0.646	40	0.000
Technology Availability(TA)	0.428	40	0.006
Technology Usage (TU)	0.515	40	0.001

V Discussion and Conclusion

Faculty members constitute one of the major sources of competitive advantage of educational institutes and universities and play a crucial role in knowledge creation and dissemination. Therefore identifying factors that determine faculty knowledge sharing behavior is essential to devise strategies to facilitate and encourage knowledge sharing. The present study is an attempt to examine the role of technological factors on faculty knowledge sharing behavior. Amongst the technological factors determining knowledge sharing, the correlation analysis makes it very clear that perceived usefulness of technology has the greatest influence on faculty knowledge sharing. This is evident from the four items under PUT that has a mean of more than 5.50. The faculty members perceive that technology (such as database, discussion groups, internet, intranet etc.) enables them to share their knowledge faster and makes it easier to share their knowledge. This indicates that there is a strong positive attitude towards knowledge sharing technology and it does influence them to share their knowledge. It can be seen that technology usage is also highly correlated with the knowledge sharing, with the TU scale items scoring a mean score of 5.0. This highlights the fact that faculty members widely make use of technology (database, virtual communities, internet, intranet etc.) to share their knowledge. Technology support available in organization is also found to be significantly influencing faculty knowledge sharing behavior. TA scale items have obtained a mean score of 5.0, indicating the positive influence of technology availability in influencing their knowledge sharing. User friendly and

updated IT tools and easy access to technology within organization are found to be the significant factors influencing them to share their knowledge.

Given the positive relationship between the technological factors and knowledge sharing behavior of faculty members, the study justifies the need to strengthen the investments in knowledge sharing technologies and infrastructure to facilitate knowledge sharing among faculty of higher education institute and universities. Technology poses both opportunity and challenges in effective implementation of any KM initiative within the organization. Determining the attitude of faculty towards various knowledge sharing technologies, assessing the actual usage of IT by faculty, proper training on utilization of technologies and evaluating the technology support requirements will enable the organization to reap the benefit of effective knowledge sharing.

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