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Knowledge Workers' Attitudes Toward an Inter-organisational Knowledge-Sharing System in the Education Sector

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Abstract

This study aimed to assess the predictors of knowledge workers' attitudes toward an inter-organisational knowledge sharing system (IOKSS) in horizontally-linked organisations in the education sector. Though IOKSS may encounter several organisational and individual challenges, their deployment in knowledge-intensive sectors can be valuable, if not crucial, to effective social and economic development, especially in developing countries. Knowledge workers' attitudes toward IOKSS are critical as they are the driving force of such systems; IOKSS can only survive through workers' commitment and use. However, previous research on inter-organisational systems (IOS) has focused on organisational adoption, particularly on vertically-linked organisations. Based on data collected from schoolteachers in organisations in the education sector, this study's results indicate that several factors related to the individual, peers, the proposed IOKSS, and the organisation significantly contribute to knowledge workers' attitudes toward IOKSS. Such results are valuable for researchers and practitioners in their adoption of IOKSS in the education sector.

Keywords: Knowledge Workers, Inter-organisational System, Inter-organisational Knowledge Sharing System, School Teachers, Education Sector

1. Introduction

This study aimed to investigate the key success factors to knowledge workers' attitudes toward the development of a "public good" inter-organisational knowledge sharing system (IOKSS) among horizontally-linked (i.e., on the same business level) organisations in a specific sector in a specific country: education in Oman. An IOKSS is a type of interorganisational system (IOS) first identified by Cash and Konsynski (1985), who defined it as an automated and shared information system designed to link business processes of multiple organisations (Cash and Konsynski, 1985; Robey et al., 2008). Several operational, strategic, and social benefits can result

from deploying IOS for participating organisations (Barrett and Konsynski, 1982; Robey et al., 2008), the government, and society at large.

In this study, an IOKSS is a type of knowledge management system (KMS) defined as a system that enables the seamless dissemination of individual and organisational knowledge, either via repositories or networking, between two or more organisations. For the education sector, an IOKSS can be developed to enable teachers in various schools to share knowledge regarding teaching cases, assignments and solutions, reports, and examinations, among other aspects of education and pedagogy. Teachers can share knowledge (e.g. course materials, solutions, training materials, etc.) through an education IOKSS either by codifying knowledge into the system or by communicating knowledge with their peers via the system (e.g., by using video-conferencing). More specifically, a "public good" IOKSS is open to all organisations regardless of their contribution to the system's development (Choudhury, 2007).

There is an undeniable need for developing countries to take advantage of new technologies for the management of knowledge exchange, as several international organisations have indicated. In general, knowledge networks are needed to address specific needs or to resolve particular problems, as well as to create a systemic capacity to share knowledge and information within a domain (Dawes et al., 2009). Within a given country, inter-organisational information integration is a key enabler for digital government (Pardo and Tayi, 2007). Furthermore, partnerships among public and private organisations in specific sectors—especially service- or knowledge-based sectors—are vital for any country's social and economic development and social welfare in sectors such as health and education. Inter-organisational information integration enables knowledge workers to exchange up-to-date professional knowledge and to learn, both of which reduce knowledge gaps among professionals. From another angle, IOKSS initiatives can contribute to the government's developmental decision-making and planning.

One way for developing countries to bridge knowledge gaps with developed countries is to improve their public and private organisations' ability to create and share knowledge by investing in KMS, including IOKSS. However, costs of and risks in establishing inter-organisational networks and collaborations can prove discouraging

(Williams, 2005). As barriers, these costs and risks are linked to individual, organisational, technological, social, and political factors related to different stakeholders, including organisations with horizontal linkage. Even within a specific organisation, knowledge-sharing is a challenging process, for many people are unwilling to share their best practices. Crossing these and other organisational boundaries by using IOKSS can further complicate the knowledge-sharing process. Studies by Bock et al. (2005), Kankanhalli et al. (2005), Wasko and Faraj (2005), Al-Alawi et al. (2007), and Chen et al. (2012) have investigated the enablers (or motivators) of general knowledge-sharing behaviour in organisational contexts and generally underscored that these obstacles must be overcome in order to develop efficient, sustained inter-organisational networks, including IOKSS.

Prior IOS have mainly focused on organisational adoption (Bala and Venkatesh, 2007; Robey et al., 2008) yet given inadequate attention to the context of these IOS (Makipaa, 2006). Most other previous empirical studies have investigated IOS deployment in vertically-linked organisations (Grover, 1993; Rai et al., 2006; Ranganathan et al., 2011; Reich and Benbasat, 1990). Furthermore, few theoretical studies, such as those of Pardo et al. (2006), Dawes et al. (2009), and Yang and Maxwell (2011), have addressed IOS adoption by horizontally linked organisations. At the same time, very few studies have assessed IOKSS adoption by knowledge workers who are also end-users and thus key stakeholders in any knowledge management initiative. As such, assessing knowledge workers' attitudes prior to the actual deployment of IOS will enable organisations to make better decisions and ensure end-user commitment throughout the developmental process.

An earlier theoretical paper by the author developed a list of factors that could impact knowledge workers' attitudes toward IOKSS (Al-Busaidi, 2013). According to this present study, the antecedents of knowledge workers' attitudes toward IOKSS can be related to the individual (e.g., personal innovativeness, knowledge self-efficacy, and image), to peers (e.g., attitude, interactivity level, and trustworthiness), to the proposed IOKSS system (e.g., its perceived ease of use, usefulness, and security), and to the organisation (e.g., its culture and technological infrastructure). By extension, the present study aimed to provide further empirical insights based on data collected from schoolteachers in the education sector in Oman. According to the World Bank,

the education sector is a chief pillar of any knowledge-based economy, as well as an area of social and economic interest in several countries. As such, knowledge management can play both a crucial and strategic role in the education sector. Several studies have illustrated the importance of networked knowledge sharing for education (Edge, 2005; Goswami et al., 2013; Lim et al.; 2013) and professional development (Leask and Younie, 2013; Rampai and Sopeerak, 2011). In particular, Goswami et al. (2013) illustrated the 'novel experience' of bridging the digital gap in education in rural India, and Edge (2005) illustrated how the Toronto School District employs knowledge management to improve early literacy instruction and achievement in its schools.

2.0 Predictors of Knowledge Workers' Attitudes toward IOKSS

2.1 Knowledge Workers

Several individual factors may affect knowledge workers' adoption of IOKSS; these factors can be related to their personal innovativeness, knowledge self-efficacy and image. First, Knowledge workers' personal innovativeness may also impact their attitudes toward IOKSS. Personal IT innovativeness is an individual's attitude toward experimenting with new IT independently of the communicated experience of others. "Being used to adapting to new systems and processes might reveal the usefulness and ease of use more quickly to an innovative person than to a non-innovative person" (Schillewaert et al., 2005, p.843). Personal innovativeness impacts individuals' adoption of KMS (Xu and Quaddus, 2007). Also, willingness to experiment may impact adoption of inter-organizational knowledge networks (Dawes et al., 2009). Second, knowledge self-efficacy is critical to individuals' knowledge sharing behaviour especially in electronic format including IOKSS. Knowledge-self efficacy is significant knowledge contributors' usage KMS (Kankanhalli et al., 2005) as professionals who have insufficient knowledge may feel incompetent and are reluctant to share their knowledge. Third, image can be another important social factor that affects knowledge workers' attitudes toward IOKSS in their domain. Image is the degree to which an individual believes the use of an innovation will improve one's position in one's social system (Moore & Benbasat, 1991). Individuals are

motivated to contribute to the collective good in an organization as long as they maintain their social identity (Yang and Maxwell, 2011). Thus:

Knowledge workers' characteristics are significantly related to their attitudes toward IOKSS.

2.2 Peers

Knowledge workers' attitudes toward IOKSS might be also associated with their peers' characteristics such as trustworthiness, interactivity and attitude. First, trust is significant factor in several knowledge-based activities including knowledge externalization found to be statistically significant (Lee and Choi, 2003), and is positively related to knowledge sharing in organizations (Al-Alawi et al, 2007). Also, in IOS context, partner's trust affects organization adoption of IOS (Lee and Lim (2005). Second, peers' existing inter-organizational communication may influence individuals' attitudes IOKSS. Team communication style was found to be positively related to individuals' knowledge sharing behaviour (Wang and Noe, 2010). Existing social network impacts intra-organizational information sharing, including inter-organizational information sharing (Yang and Maxwell, 2011). Third, peers' attitudes toward the technology may impact individuals' attitudes toward the technology (Ajzen, 1991). In KMS context, subjective norm affect individuals' intention to share knowledge (Bock et al. (2005). Thus:

Peers' characteristics are significantly related to knowledge workers' attitudes toward IOKSS.

2.3 Perceived IOKSS

Knowledge workers' attitudes toward IOKSS may also be associated with their perception of this proposed system's ease of use, usefulness, compatibility and security. First, perceived ease of use affects users' acceptance of technology (Venkatesh and Davis, 2000). Having a user-friendly, easy to learn and use knowledge management system influences end users' adoption (Xu and Quaddus, 2007), and can be a critical factor to IOS implementation (Yang and Maxwell, 2011). Second, perceived usefulness is one of the main significant factors on individuals' acceptance of a technology (Venkatesh and Davis, 2000). Perceived usefulness was a significant factor on professionals' attitudes toward knowledge sharing (Hung et al., 2010), and can be a critical factor to IOS implementation (Yang and Maxwell, 2011).

Third, perceived security can be an important technical issue for the adoption of IOKSS especially when confidential information/knowledge is shared among several organizations in a sector. The importance of security is confirmed by several IS researchers such as Chang and Wang (2011), KM researchers such as Jennex and Zyngier (2007), and highlighted by IOS researchers such as Boonstra and De Vries (2005) and Yang and Maxwell (2011). Thus:

IOKSS system's characteristics are significantly related to knowledge workers' attitudes toward IOKSS.

2.4 Organization

Organization factors such as organization culture, organization structure and technology competence might contribute to knowledge workers' attitudes toward IOKSS. First, organization culture where senior managers endorse KMS initiative and reward knowledge exchange reduces individual experts' fear of losing their values. Organization culture is critical for KMS (Davenport and Prusak, 1998; Gold et al., 2001), and extremely critical to endorse KMS including the IOKSS, and consequently change employees' attitudes. IOS literature has also emphasized the importance of top management support for IOS adoption (Grover, 1993; Robey et al., 2008). Second, technological infrastructure that supports the communication of various types of knowledge is critical for building a firms' knowledge infrastructure capability (Gold et al., 2001) and the development of IOS (Lin, 2006; Robey et al., 2008; Yang and Maxwell, 2011). Having a compatible IT infrastructure is a major enabler of IOS, and improves knowledge workers' attitudes toward IOKSS. Thus:

Organization's characteristics are significantly related to knowledge workers' attitudes toward IOKSS.

3.0 Methodology

3.1 Data Collection and Participants

Ten randomly selected schools at different levels in both the public and private sectors in Muscat, Oman, were contacted to invite their teachers to participate in this study. Of the 10, six responded affirmatively. Though 250 paper-based questionnaires were

distributed, only 75 were returned and, of these, only 57 completely responded to this study's indicators.

About 40% of the teachers were men, while 60% were women. Approximately 75% of them had a bachelor's degree, 5% had a diploma degree, 16% had a Master's degree, and the rest had other qualifications. By age, 21.1% were in their 20s, 52.6% in their 30s, 17.5% in their 40s, and 8.8% in their 50s or older. Subjects taught by respondents varied. By familiarity with computers, roughly 3% of respondents reported below-average computer skills, 36.8% average computer skills, and 59.6% above-average computer skills. Most teachers (57.9%) had at least 5 years of professional experience, while 28.1% had less than 5 years of professional experience and 14% did not identify their experience. About 49.1% of respondents taught in the private sector, while 50.9% worked in the public sector. Most teachers (approximately 82%) indicated that they supported the deployment of IOKSS in the education sector, while 5.3% indicated that they supported its deployment in the public education sector only and 5.3% supported its deployment in the private education sector only. Though 0% indicated that they did not support its deployment, 7% of respondents did not answer.

3.2 ICT Status in the Education Sector

In 2007, the Ministry of Education in Oman developed an electronic educational portal that, according to the Ministry's website, enables the 'quick transmission of information, ideas, experiences and views on various aspects of the educational process'. The system is accessed by all schools in the country, as well as their teachers, administrative staff members, students, and students' parents or guardians. The educational portal integrates three main systems: the School Management System (SMS), which transforms administrative tasks in schools into electronic form; (2) the Learning Management System (LMS), which manages all aspects of publishing e-learning content (e.g., digital texts, e-books, audio and video materials) to present material attractively to both teachers and students; and (3) the Documents Management System (DMS), which tracks and archives electronic documents sent by users. For teachers, the knowledge workers (the focus of this study), the educational portal enables them to enter student's absence and inquiry of daily attendance, enter students' semester marks, inclusion of student's performance periodic report, view

student's electronic file, supervise the selection of school activities members, view school schedule, view exams schedule, reserve classes for learning resource center, borrow sources and instructional aides through the system, participate in news and educational publications, vote on educational issues and topics, participate in educational forums, remain interactive regarding curricula (e.g., with short exams and assignments) for students, and supervise both virtual classes and students' self-learning via e-learning.

For other users, the portal also provides some functionality. It enables students to view the class and examination schedule, view their performance reports, view their daily absences, choose subjects for grades 11 and 12, request to retake the general certificate examination in the case of an excused absence, request a certificate, choose the activities of the division council and its members, view their personal electronic data file, vote on educational issues and topics, view detailed reports on the level of educational subjects, reserve resources from the learning resource centre, attend virtual classes and self-learning, and obtain results for all subjects via SMS, among others.

At the same time, the portal allows parents and guardians to view their student's data in an electronic file, update and modify data in the electronic file, view their student's absences, view their student's activities, view notices and reports by date, view their student's performance reports, view the class schedule, read news and educational publications, request a corrected examination paper and certificate for their student, re-register their student, be notified of the subjects chosen by their student via SMS, temporarily terminate their student's registration at school via SMS, and request that their student repeat general education examination due to an excused absence, among others.

3.3 Constructs' Indicators

The questionnaire included several measures of the study's constructs, along with demographic questions (e.g., gender, age, degree, work experience, etc.). Construct measurements items were phrased according to a five–point Likert-type scale (1= strongly disagree; 2=disagree; 3=Neutral; 4= agree and 5=strongly agree). The constructs' indicators were adopted from previous studies in KMS and IOS. Indicators

of attitude toward IOKSS construct were adapted from Bock et al. (2005). Indicators of individual constructs (i.e., personal innovativeness, image, and knowledge efficacy) were adapted from Schillewaert et al. (2005), Venkatesh and Davis (2000), and Kankanhalli et al. (2005). Indicators of the constructs of perceived ease of use and usefulness were adapted from Venkatesh and Davis (2000), whereas indicators of the construct of perceived security were adapted from Salisbury et al. (2001). Indicators of peer constructs (i.e., trust, interactivity, and attitude) were adapted from Kankanhalli et al. (2005), Wang et al. (2012), and Bock et al. (2005), respectively. Indicators of the organisational constructs were adopted from Gold et al. (2001). Some indicators were dropped during the analysis stage due to their low loading. Unfortunately, due to size limitations for research-in-progress papers, the indicators and their loadings have been omitted but can be provided upon request.

4. Data Analysis and Results

4.1 Technologies' Usefulness

Respondents were asked to evaluate the usefulness of technologies for IOKSS based on 5-point Likert-scale (1 = Very useless, 2 = Useless, 3 = Neither useful nor useless, 4 = Useful, 5 = Very useful). Figure 1 shows the usefulness of these technologies according to respondents. These results show that the respondents find traditional repositories of knowledge-sharing systems (e.g., best practices databases, lessons learned systems, and information repositories) as useful as networking knowledge-sharing systems (e.g., email, expertise locator systems, team collaboration tools, and instant messages). Results also exhibited that web 2.0 technologies (e.g., blogs and wikis) are considered to be moderately useful tools among schoolteachers.

In terms of synchronous knowledge-sharing networking tools, school teachers considered teleconferencing to be more useful than videoconferencing and text-chat rooms. Since teleconferencing is a richer tool than text-chatting, it is a better networking tool. However, though teleconferencing is not richer than videoconferencing, it is a preferred tool for a conservative culture. Multimedia sharing (text-documents sharing, audio sharing, photos sharing and video sharing) was

considered by respondents useful. In this sense, developing a web- and mobile-enabled IOKSS can add to its usefulness.
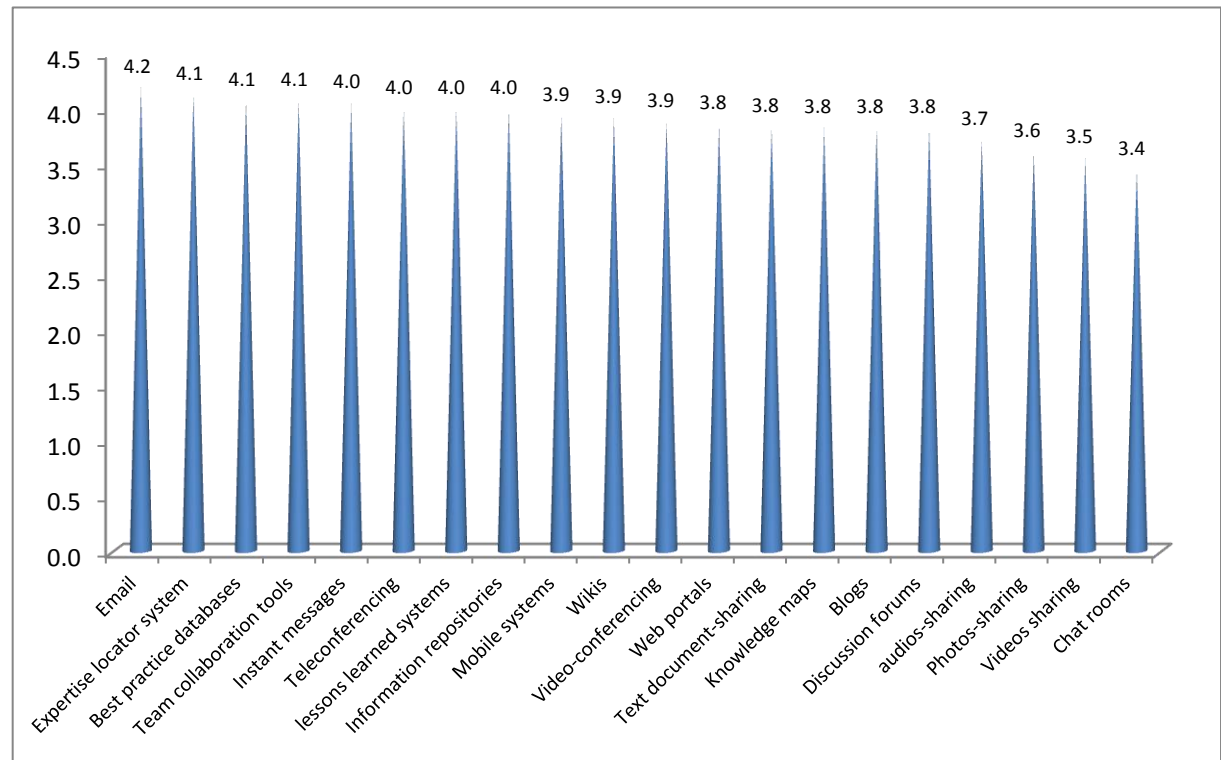

Fig 1: Technologies Usefulness for IOKSS

4.2 Constructs Validity and Reliability

PLS-Graph 3.0 software was used for data analysis. The reliability of the construct measurements was evaluated by internal consistency reliability, while their validity was measured by the average variance extracted (AVE), which refers to the amount of variance that a latent construct captures from its indicators. According to Chin (1998; 2001), a sample size must be at least five times the number of paths toward the independent construct, which is 11 in this case; thus, the sample size of 57 was deemed sufficient for analysing the model. The recommended level for internal consistency reliability is at least 0.70 and at least 0.50 for AVE (Chin, 1998). Table 1 shows the model's construct measurements and that the construct reliability and AVE were above the recommended levels for all constructs.

Construct	Indicators	Reliability	AVE	ATTITUDE (Beta; P-Value)
Personal Innovativeness	2	0.701	0.528	0.436; < 0.009
Image	2	0.787	0.664	0.002; n. s.
Knowledge Self efficacy	3	0.700	0.501	-0.108; n. s.
Peers Trust	3	0.737	0.588	0.256; < 0.083
Peers Interactivity	3	0.865	0.683	-0.027; n. s.
Peers Attitude	2	0.939	0.884	0.084; n. s.
IOKSS Perceived Ease of Use	3	0.827	0.708	-0.048; n. s.
IOKSS Perceived Usefulness	3	0.900	0.750	0.003; n. s.
IOKSS Perceived Security	3	0.796	0.671	0.202; < 0.134
Organization Culture	3	0.884	0.719	0.276; < 0.020
Organization IT	3	0.832	0.635	0.016; n.s.
Attitude	5	0.861	0.556	N/A
Note: n.s. = not significant; N/A = not applicable				

Table 1: Study's Constructs and Their Significance

4.2 Construct Significance

The model explains 59.5 % of knowledge workers' attitudes toward IOKSS. The significance of the model's paths was assessed based on their *t* values. Table 2 shows the constructs significantly associated with respondents' attitudes toward IOKSS in the education sector in order of their significance: personal innovativeness ($\beta = 0.436$; $p < 0.009$), organisational culture ($\beta = 0.276$; $p < 0.020$), and trust in peers ($\beta = 0.256$; $p < 0.083$). Perceived security regarding IOKSS was the highest systemic construct that impacted respondents' attitudes toward IOKSS, though it was significant ($\beta = 0.202$) at a confidence level of only 87%. The study could not find any significance between teachers' attitudes toward IOKSS and knowledge efficacy, image, peers' attitudes, peers' interactivity, IOKSS perceived ease of use, IOKSS perceived usefulness, or organisational IT.

5. Discussion and Conclusions

IOKSS are valuable, if not crucial, for social and economic development in any country, especially for service- and knowledge-based sectors. Particularly, IOKSS can be an integral part of e-government. According to the World Bank, education and human resources are two chief pillars of any knowledge economy; thus, it is very important to develop information and communication technologies, such as IOKSS, that enable the effective, efficient transfer of resources in the education sector.

However, previous theoretical and empirical research on knowledge-sharing has focused on the intra-firm context, while studies of IOS lack investigations of knowledge workers' adoption of such systems. Furthermore, most empirical IOS studies have focused mainly on the organisational adoption of IOS in vertically linked supply-chain organisations. Therefore, this study sought to assess factors associated with knowledge workers' attitudes toward IOKSS in a specific sector in a specific country.

Research has indicated several factors that might be linked to knowledge workers' attitudes toward IOKSS. These factors are related to the knowledge workers themselves (i.e., personal innovativeness, knowledge efficacy, and image), their peers (i.e., trust, interactivity, and attitude), the adopted IOKSS system (i.e., perceived ease of use, usefulness, and security), and their organisations (i.e., culture and IT infrastructure). Based on preliminary data collected from schoolteachers in different schools in the education sector in Oman, this study found that several factors are associated with schoolteachers' attitudes toward IOKSS in the education sector. In order of significance, these factors are personal innovativeness, organisational culture, and trust of peers. As such, knowledge workers'—specifically school teachers'—attitudes toward IOKSS are associated mainly with their individual characteristics (i.e., personal innovativeness), their relationships with peers (i.e., trust), organisational factors (i.e., culture), and systemic factors of IOKSS (i.e., perceived security).

To begin, the impact of personal innovativeness has been highlighted by numerous studies yet rarely investigated in the context of knowledge-sharing and IOKSS. IOS studies in horizontally-linked organisations in the health sector revealed that extra work time (Liau et al., 2010) and resistance to change (Sanchez et al., 2008) are some individual challenges for IOS deployment. In their qualitative assessment of online community of practice in the education sector in Turkey, Baran and Çağıltay (2006) found that 'some teachers are eager to learn new things and improve their field knowledge' (p. 18). Similarly, this present study also found that only people willing to try new things (i.e., with high technological innovativeness) will exert extra effort in order to share knowledge via IOKSS.

Second, trust in peers has been highlighted as a crucial factor in the knowledge sharing (Davenport and Prusak, 1998) and IOS contexts (Lee and Lim, 2005). Lee and Lim (2005) found that trust in partners affects an organisation's adoption of IOS. Though a study of Petroleum Company in Oman showed that trust of peers is not a significant factor for knowledge sharing (Al-Busaidi et al, 2010), the present study found it is significant in the IOKSS context, which implies that trust of peers is crucial when sharing knowledge across organisational boundaries. Thus, one design principle of IOKSS is to allow the source of shared knowledge to be identified in order to ensure that knowledge workers receive recognition for their shared knowledge.

Third, this study found that organisational culture is a significant factor for schoolteachers' attitudes toward IOKSS deployment. Since promoting knowledge-sharing can be more challenging in Middle Eastern countries, where knowledge is perceived as powerful and private, managers in the Middle East are recognised as high authorities (Ali, 1990) and their support for IOKSS projects undoubtedly improves employees' attitudes toward the system. Thus, promoting a culture that encourages and rewards knowledge-sharing across the education sector is crucial both to ensuring schoolteachers' commitment to IOKSS deployment and to improving their attitudes toward it. Thus, one deployment principle holds that it is critical that top managers promote a knowledge-sharing culture in their schools, as well as endorse KMS, including IOKSS, and consequently change schoolteachers' attitudes toward it. Edge's (2005) qualitative study also found that organisational culture that promotes knowledge-sharing is crucial for managing knowledge in Toronto schools. IOS literature has also emphasised the importance of top management's support for IOS adoption in vertically linked organisations (Grover, 1993; Robey et al., 2008).

Fourth, the study was unable to detect the significance of the IOKSS system factors and schoolteachers' attitudes toward IOKSS at a confidence level of 95%. However, perceived security of IOKSS was considered significant at a confidence level of 85%. The criticality of perceived security of IOKSS on schoolteachers' attitudes is logical in private culture. Researchers have considered the perceived security of IOS to be crucial as information and knowledge crosses organisational boundaries, as indicated by studies of public sector IOS (Yang and Maxwell, 2011) and of vertically-linked organisations (Boonstra and de Vries, 2005) .

The present study also highlighted the technologies that schoolteachers consider to be useful for inter-organisational knowledge-sharing in the education sector. These technologies provide some insights into the important functionalities and tools for IOKSS development. Findings suggest that repository knowledge-sharing tools are as important as networking tools and that web 2.0 technologies can be also useful for schoolteachers. The IOKSS should also enable the sharing of different types of media (e.g., text, images, audio, and video). In this regard, the current educational portal in Oman includes information and knowledge repository and archiving tools, as well as collaborative information and knowledge-sharing tools. A public email system, electronic chat rooms, and discussion forums have also been integrated. The portal supports the sharing of type of information and knowledge using multimedia. However, advanced synchronous teleconferencing and videoconferencing tools, as well as web 2.0 tools, remain unintegrated. More structured knowledge-sharing systems that allow the sharing of best practices and lessons learned, as well as an expertise locator system, should also be integrated in order both to improve the usefulness of the current educational portal and to extend its capabilities. Certainly, the development of public-good IOKSS in the education sector requires more functionalities and coverage than the ones exist in the current educational portal. Such IOKSS development can enable a rich, collaborative learning environment that promotes the training and professional development of schoolteachers and, in turn, the country's education sector.

Even with limited data collection and analysis, these study findings provide significant preliminary insights for practitioners and researchers. The study identified and provided reliable, valid measurements for researchers and practitioners to assess key factors associated with knowledge workers' adoption of IOKSS. The study also identified a list of factors that may contribute to knowledge workers' adoption of IOKSS, which can be used in planning and organisational decision-making regarding their adoption of IOKSS. This assessment can be very valuable for developing countries, since technological innovations such as IOKSS can be crucial for training and building human resources, as well as for national knowledge management.

The study has some limitations. First, the sample size in this preliminary study is only 57. Though sufficient to detect some associations between each proposed construct and knowledge workers' attitudes toward IOKSS in the education sector, a larger sample size is needed to conduct more rigorous multivariate analysis. Second, the findings of this study were applicable only to the education sector. Future studies should therefore gather empirical evidence from similar or different sectors in more other developing countries. Third, attitudes toward IOKSS might be different before and after implementation.

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References

Ajzen, I. (1991) The theory of planned behaviour. *Organizational Behavior and Human Decision Process,* 50(2), pp. 179-211.

Al-Alawi, A., Al-Marzooqi, N. and Mohammed, Y. (2007) *Organizational culture and knowledge sharing: critical success factors,* Journal of Knowledge Management, 11(2), 22-42.

Al-Busaidi, K.A., Olfman, L., Ryan, Tand Leroy, G. (2010) *Sharing knowledge to a knowledge management system: examining the motivators and the benefits in an Omani organization,* Journal of Organizational Knowledge Management Article ID 325835, 12 pages.

Al-Busaidi, K. (2013) *A Framework of Critical Factors to Knowledge Workers' Adoption of Inter-organizational Knowledge Sharing Systems*, Journal of Organizational Knowledge Management, vol. 2013, Article ID 496419, 11 pages.

Ali, A. J. (1990) *Management Theory in a Transitional Society: The Arab's experience,* International Studies of Management and Organization, 20(3), 7-35.

Baran, B. and Çağıltay, K. (2006). *Knowledge management and online communities of practice in teacher education,* The Turkish Online Journal of Educational Technology, 5(3), 12-19.

Bala, H., Venkatesh, V. (2007) *Assimilation of interorganizational business process standards,* Information Systems Research, 18(3), 340-362

Barrett, S. and Konsynski, B.R. (1982) *Inter-organizational information sharing systems,* MIS Quarterly/special issue, 93–105.

Bock, G. W., Zmud, R. W., Kim, Y. G., and Lee, J. N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly*, 29(1), pp.87–111.

Boonstra, A., and de Vries, J. (2005) *Analyzing inter-organizational systems from a power and interest perspective*, International Journal of Information Management, 25(6), 485–501

Cash, J.I and Konsynski, B.R. (1985) *IS Redraws Competitive Boundaries*, Harvard Business Review, March-April, 134-142.

Chang, K.-C., and Wang, C.-P. (2011) *Information systems resources and information security,* Information Systems Frontiers, 13(4), 579-593.

Chen, S-S, Chuang, Y-W., and Chen, P-Y. (2012) *Behavioral intention formation in knowledge sharing: Examining the roles of KMS quality, KMS self-efficacy, and organizational climate,* Knowledge-Based Systems, 31, 106-118.

Chin, W. (1998) *The partial least square approach to structural equation modelling.* In: G.A Marcoulides, ed. Modern methods for business research. London: Lawrence Erlbaum Associates, 295–336.

Chin, W. (2001). *PLS graph user's guide, version 3.0.* Houston, TX: Bauer College of Business, University of Houston.

Choudhury, V. (1997). *Strategic Choices in the Development of Interorganizational Information Systems,* Information Systems Research, 8(1), 1-24.

Dawes, S. S., Cresswell, A. M. and Pardo, T. A. (2009) *From "Need to Know" to "Need to Share": Tangled Problems, Information Boundaries, and the Building of Public Sector Knowledge Networks,* Public Administration Review, 69(3), 392-402.

Davenport, T.H., and Prusak, L. (1998) Working knowledge, Boston, MA: Harvard Business School Press.

Edge, K. (2005) *Powerful public sector knowledge management: a school district example,* Journal of Knowledge Management, 9(6), 42-52.

Gold, A. H., Malhotra, A., and Segars, A. H. (2001) *Knowledge Management: An organizational capabilities perspective,* Journal of Management Information Systems, 18(1), 185- 214.

Grover, V. (1993) *An empirically derived model for adoption of customer-based inter-organizational systems,* Decision Sciences, 24(3), 603–640.

Goswami, P., Mahapatra, R. and Divyasukananda, S. (2013) *Bridging the digital gap in rural India VIVEKDISHA: A novel experience,* 2013 National Conference on Communications (NCC), Feb. 2013, 1, 5, 15-17.

Jennex, M.E., and Zyngier, S. (2007) *Security as a contributor to knowledge management success,* Information Systems Frontiers, 9(5),.493-504.

Kankanhalli, A., Tan, B. C. Y., and Wei, K. K. (2005) *Contributing knowledge to electronic knowledge repositories: an empirical investigation,* MIS Quarterly, 29(1), 113–143.

Leask, M. and Younie, S. (2013) *National models for continuing professional development: The challenges of twenty-first-century knowledge management,* Professional Development in Education, 39(2), 373-287

Lee, H. and Choi, B. (2003) *Knowledge enablers, processes and organizational performance: An integrated view and empirical examination,* Journal of Management Information Systems, 20(1), 179-228.

Lee, S., and Lim, G. (2005) *The impact of partnership attributes on EDI implementation success*, Information & Management, 42, 503–516.

Lin, H.-F. (2006) *Interorganizational and organizational determinants of planning effectiveness for Internet-based interorganizational systems*, Information and Management, 43 (4), 423-433

Lim, C., Chai, C, and Churchil, D. (2011) *A framework for developing pre-service teachers' competencies in using technologies to enhance teaching and learning,* Educational Media International, 48(2), 69-83.

Liau C-Y, Lin C-C, Lin Y-K and Lin B-J (2010) *Partnership Disengagement from primary community care networks (PCCNs): a qualitative study for a national demonstration project,* BMC Health Services Research, 10(87).

Mäkipää, M. (2006) *Inter-organizational information systems in cooperative inter-organizational relationships: Study of the factors influencing to success,* IFIP International Federation for Information Processing (226),.68-81.

Ministry of Higher Education. (2014). *Educational Portal.* Retrieved from: http://home.moe.gov.om/english/

Moore, G. C. and I. Benbasat. (1991) *Development of an instrument to measure the perceptions of adopting an information technology innovation*, Information Systems Research, 2(3), 173-191.

Pardo, T. A., Cresswell, A. M., Thompson, F., and Zhang, J. (2006*) Knowledge sharing in cross-boundary information system development in the public sector,* Information Technology and Management, 7(4), 293−313.

Rampai, N. and Sopeerak, S. (2011) *The development model of knowledge management via web-based learning to enhance pre-service teacher's competency*, TOJET: The Turkish Online Journal of Educational Technology, 10(3), 249-253.

Rai, A., Patnayakuni, R., and Patnayakuni, N. (2006) *Firm performance impacts of digitally-enabled supply chain integration capabilities*, MIS Quarterly, 30(2), 225–246.

Ranganathan, C., Teo, T. S.H., and Dhaliwal, J. (2011) *Web-enabled supply chain management: Key antecedents and performance impacts*, International Journal of Information Management, 31(6), 533–545

Reich, B H and Benbasat, I. (1990) *An empirical investigation of factors influencing the success of customer oriented information systems*, Information Systems Research, 1(3), 325-347

Robey, D., Im, G., and Wareham, J. (2008) *Theoretical Foundations of Empirical Research on Interorganizational Systems: Assessing Past Contributions and Guiding Future Directions,* Journal of the Association for Information Systems, 9(9), 497-518.

Sanchez cl, et al (2008) *Social network of PESCA (open source platform for eHealth*, Studies in Health Technology and Informatics, 137, 340–345.

Schillewaert, N., et al., (2005). *The adoption of information technology in the sales force,* Industrial Marketing Management, 34 (4), 323–336.

Venkatesh, V., and Davis, F. (2000) *A Theoretical Extension of the Technology Acceptance Model: Four longitudinal*, Management Science , 46(2), 186-204.

Wang, S. and Noe, R.A.(2010) *Knowledge sharing: A review and directions for future research,* Human Resource Management Review, 20, 115–131

Wasko, M.M. and Faraj, S. (2005) *Why should I share? Examining social capital and knowledge contribution in electronic networks of practice,* MIS Quarterly, 29(1), 35-57.

Williams, T. (2005) *Cooperation by design: structure and cooperation in inter-organizational networks,* Journal of Business Research, 58(2), 223-31.

Xu, J. and Quaddus, M. (2007) *Exploring the factors Influencing End Users' Acceptance of Knowledge Management Systems: Development of a Research Model of Adoption and Continued use,* Journal of Organizational and End User Computing, 19(4), 57-79.

Yang, T.-M. and Maxwell, T.A. (2011) *Information-sharing in public organizations: A literature review of interpersonal, intra-organizational and inter-organizational success factors,* Government Information Quarterly, 28(2), 164–175.