Determinants of Knowledge Sharing Behaviour among Academics in United Arab Emirates

Huda Alami Skaik, International Islamic University Malaysia, Kuala Lumpur, Malaysia

Roslina Othman, International Islamic University Malaysia, Kuala Lumpur, Malaysia

ABSTRACT

The main objectives of this research are to (i) investigate the practice of knowledge sharing among academics, and (ii) examine the relationship between knowledge sharing behaviour and its predictors based on the Theory of Planned Behaviour. Data were collected through an online survey using a questionnaire from academics in public universities. Using SPSS and PLS-SEM, data analysis process involved (i) analysis of descriptive statistics to evaluate knowledge sharing practice, (ii) assessment of the measurement model to evaluate items reliability and validity, and (iii) assessment of the structural model to evaluate its validity, path coefficients, and test the hypotheses. The results showed a great extent of knowledge sharing practice. They proved that academics' knowledge sharing behaviour is significantly influenced by intention, which is influenced by attitude, subjective norms, and self-efficacy. Contrary to the theory, the results showed that controllability does not influence intention.

Keywords: Academics, Higher Education, Knowledge Sharing Behaviour, Knowledge Sharing Practice, Theory Of Planned Behaviour, UAE

INTRODUCTION

Knowledge sharing is one of the major processes of knowledge management (Nonaka & Takeuchi, 1995) and its strategies are keys to organizational and individual development (Alavi & Leidner, 2001; Earl, 2001). It is defined as the process of exchanging and transferring existing knowledge and ideas among people in order to create new knowledge and ideas (Syed, Zaini, Noormala & Zahairah, 2009).

The benefits of knowledge sharing for organizations and individuals are numerous. On the organizational level, the benefits include facilitating knowledge creation (Akhavan, Ghojavand & Abdali, 2012), achieving continuous organizational growth, survival, and development (Durmusoglu, Jacobs, Nayir, Khilji &

Wang, 2014), meeting organizational goals and objectives (Wang & Noe, 2010), solving business problems (McDermott & O'Dell, 2001), enhancing performance, maintaining competitiveness and profitability (Hsu, 2008), gaining better understanding of customer needs and identifying new business opportunities (Sandhawalia & Dalcher, 2011), enhancing process efficiency (Chugh, 2012), and improving the knowledge base for decision-making and more balanced policy decisions (Egger, 2013).

On the individual level, the benefits include getting the information easier and faster (Badaracco, 2010), promoting individuals' learning and innovation (Ling, Sandhu & Jain, 2009), transferring knowledge among workers in the same unit or from one unit to another (Burgess, 2005), strengthening capabilities (Egger, 2013), enhancing performance (Xiao & Jin, 2010), improving efficiency (Cummings, 2004), empowering team effectiveness (Pangil & Chan, 2014), developing strategies to encourage organizational knowledge base (Reychav & Weisberg, 2009), reducing loss of individuals' knowledge and expertise (Gurbuz, 2008), and transmitting knowledge and expertise to new generations (Badaracco, 2010).

Recognizing the importance of knowledge sharing is creating a demand for applying it in higher education institutions, which are seen as knowledge-intensive environments. The role of knowledge sharing is significant to achieve the maximum results for higher education institutions considering the important role they play in creating, managing, and disseminating knowledge in society (Babalhavaeji & Kermani, 2011).

Moreover, academics are seen as expert knowledge workers engaged in teaching, writing, and research from which their academic institutions generate value. Bearing in mind that higher education institutions grow and prosper from the knowledge of their academics, it is quite necessary to encourage and promote knowledge sharing among academics considering their role in enhancing education, research, and scholarly work (Babalhavaeji & Kermani, 2011).

Universities are science centers established to generate and provide knowledge, and to equip people with the best education in order to serve their societies and uplift the well-being of mankind. They grow and prosper from the knowledge of their human capital, particularly the academics (Singer & Hurley, 2005). In the knowledge-based age, universities seek to ensure success and permanence, achieve organizational goals (Sharma, 2010), and have constant performance improvements. In the academic environment, the role of knowledge sharing is becoming quite significant to achieve maximum results for academic institutions (Babalhaveji & Kermani, 2011) due to the important role academics play in providing education, conducting research, and publishing scholarly works. Therefore, universities should promote knowledge sharing among their academics.

Knowledge Sharing in UAE

The United Arab Emirates (UAE) has experienced significant local and foreign investments in various fields such as business, construction, infrastructure, financial services, telecommunications, media, information technology, hospitality and tourism as well as education (Ahmad & Daghfous, 2010). Nonetheless, some organizations have been very conservative in terms of integrating knowledge management initiatives and knowledge sharing strategies into their operational processes (Al-Shammari, 2008). This could be attributed to the difficulty in locating the knowledge residing within people. Therefore, there is inability in some organizations to locate, store, and share knowledge that could help in innovation, development and meeting planned objectives (Ahmad & Daghfous, 2010).

The government has been working consistently and strongly to establish a knowledge-based society with a knowledge-based economy (Al-Nahyan, 2012a). Therefore, the government strategy has recently been focusing on human capital (Al-Nahyan, 2012a, 2012b). As a step to achieve this, it has allocated more than 1/3 of

its budget to education, research and innovation (Al-Nahyan, 2012a).

Not only that, UAE is also seeking to become a regional hub for higher education that provides high quality education in diverse programs and fields (Al-Nahyan, 2012b). As a result, the government has launched partnerships with numerous international reputable academic institutions to establish campuses in UAE to work on raising the standards of higher education (Al-Nahyan, 2012a).

Moreover, UAE along with other partners are working collaboratively, whereby UAE can be the hub of knowledge and connectivity for the Arab region with its international partners worldwide (Abu-Ghazaleh, 2012). This will definitely enable higher education institutions, researchers, and knowledge workers in the Arab world to become part of the world research and education (Abu-Ghazaleh, 2012).

It has been noticed in the Arab world that there is an awareness of the benefits and advantages of knowledge sharing to create new knowledge, increase capital assets (Al-Adaileh & Al-Atawi, 2011), develop employees' competencies (Seba, Rowley & Lambert, 2012), and achieve innovation and success (Ahmad & Daghfous, 2010; Al-Alawi, Al-Marzooqi & Mohammed, 2007).

Yet there is lack of knowledge sharing strategies in the region due to economic and political complexities, organizational and national culture, lack of research and development, inadequate ICT infrastructures, and low level of willingness for knowledge revolution (Biygautane & Al-Yahya, 2011; Mohamed, O'Sullivan & Ribiere, 2008; Skok & Tahir, 2010). Such lack is viewed as the biggest impediment to progress towards a knowledge-based society. Therefore, researchers have started to address the need for a knowledge sharing strategy in the region.

PROBLEM STATEMENT

Few researchers have been focusing on knowledge sharing in UAE particularly, concentrating on business and management, construction, and police force service (Ahmad & Daghfous, 2010; Rowley, Seba & Delbridge, 2012; Seba et al., 2012; Skok & Tahir, 2010). These researchers have either studied the practice of knowledge sharing and its activities, or the effect of some organizational, individual, and technological factors on it.

However, not a single study has addressed knowledge sharing in the higher education sector. In light of that, this research intends to investigate knowledge sharing practice among academics and examine the factors influencing knowledge sharing behaviour in UAE universities based on the theory of planned behaviour.

SIGNIFICANCE OF RESEARCH

With the scarcity of empirical studies investigating knowledge sharing in the Arab world, this research aims to make a major contribution in this field. The significance of this research lies in the fact that it is the first to address knowledge sharing in higher education sector in UAE with particular emphasis on academics' knowledge sharing behaviour considering their important role in creating knowledge and the importance of knowledge sharing in achieving universities' goals. Moreover, this research is based on a solid theoretical framework by adopting one of the well-known psychological and behavioural theories.

KNOWLEDGE SHARING PRACTICE

Knowledge sharing practice is quite significant for individuals seeking to improve their performance and career as well as for organizations aiming to achieve their success and longevity. Knowledge sharing practice is manifested in the social interaction among individuals to exchange information, knowledge, experiences, skills, concepts, thoughts, opinions, insights, ideas (Durmusoglu et al., 2014; Ramlee, 2011).

Organizations that have survived from knowledge sharing are not those who only

implemented technology, but those who developed a knowledge sharing culture (Albres, 2009; Riege, 2005; Sallis & Jones, 2002). Employing technology in addition to applying knowledge sharing practices and strategies can create a knowledge sharing culture to harness organizational development (Mohamed, et al., 2008; Riege, 2005; Sveiby, 2002).

For example, in a case study in the American healthcare sector Alajmi, McInerney, Orzano, Tallia, Meese & Vamanu (2008) explored the practice of knowledge sharing and the use of different activities and tools in the practising process. They found that practice of knowledge sharing was manifested in different ways such as team working, exchanging of knowledge, asking and approaching each other whenever needed. Moreover, Haapalainen and Makiranta (2013) investigated the use of IT in acquiring and sharing knowledge in SMEs in Finland, and identified various channels to share tacit and explicit knowledge. They found that generally such companies regard IT as a potential tool to acquire and share knowledge.

Practising knowledge sharing involves using appropriate activities and tools (Alajmi et al., 2008; Paloti, 2010) that facilitate exchanging, transferring, and utilizing knowledge. Several researchers and practitioners have identified a list of the most popular activities and tools widely employed by many organizations (Ahmad & Daghfous, 2010; Alajmi et al., 2008; Al-Alawi et al., 2007; Chaudhry & Sivakamasundari, 2004; Sandhu & Sidhu, 2007; Skok & Tahir, 2010; Paloti, 2010).

The activities include team meetings, discussions, CoPs, training programs, apprenticeships, workshops, conferences, brainstorming sessions, peer coaching, focus groups, and seminars, while the tools include artifacts, educational materials, manuals, boards, procedures, databases, video screening sessions, decision-support systems, blogs, wikis, portals, and online communication channels like emails, internet and intranet.

Knowledge sharing is key component (Alavi & Leidner, 2001) in organizational and individual development (Nahapiet & Ghoshal, 1998; Nonaka, 1994). Therefore, in academic environments such as universities, management should create a knowledge sharing culture and support the practice of knowledge sharing by providing the necessary activities and tools. This would help and encourage academics to share their knowledge, knowing that they play a major role in disseminating knowledge and creating new one.

THEORETICAL BASE

The Theory of planned behaviour (Ajzen, 1985) states that human behaviour is guided by three kinds of salient beliefs: behavioural beliefs, normative beliefs, and control beliefs. Behavioural beliefs are about the likely consequences or attributes of the behaviour, normative beliefs are about the normative expectations of other people, and control beliefs are about the presence of factors that may facilitate or hinder performing the behaviour (Ajzen, 1985, 1991). In their respective aggregates, behavioural beliefs produce a favourable or unfavourable attitude toward the behaviour; normative beliefs result in perceived social pressure or subjective norms; and control beliefs give rise to perceived behavioural control, the perceived ease or difficulty of performing the behaviour (Ajzen, 1985, 1991). In combination, attitude, subjective norms, and perceived behavioural control lead to the formation of a behavioural intention. Intention is defined as the individual's willingness to engage in behaviour (Ajzen, 1985, 1991, 2002).

However, due to the conceptual and methodological ambiguities concerning the concept of perceived behavioural control, Ajzen (2002) stated that perceived behavioural control should be viewed as a unitary, higher-order concept that consists of two interrelated components (Kraft, Rise, Sutton & Roysamb, 2005). In order to resolve these ambiguities, Ajzen (2002) deconstructed perceived behavioural control into two constructs: self-efficacy and controllability. According to Ajzen (2002), self-efficacy is referred to as the individual's confidence in the ease or

Figure 1. Research model
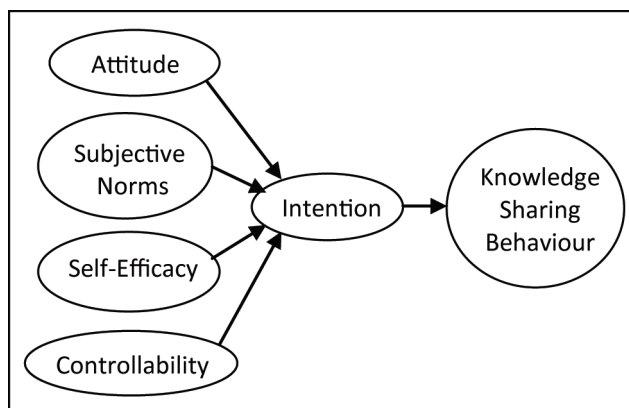
difficulty to perform certain behaviour, whereas controllability is referred to as the individual's beliefs, based on the available resources, about the extent to which performing the behaviour is up to him/her.

According to Ajzen (1991, 2006), the more favourable the attitude and subjective norms, and the greater the self-efficacy and controllability, the stronger would be the intention to carry out the behaviour in concern. Thus, intention is considered the immediate antecedent of behaviour (Ajzen, 1991, 2002, 2006). Having a sufficient degree of actual control over the behaviour, people are expected to perform the behaviour when the opportunity arises. Each of the theory elements of intention, attitude, subjective norms, self-efficacy, and controllability is counted as an aspect of the actual behaviour (Ajzen, 1991).

In knowledge sharing context, studies have found that intention significantly affects knowledge sharing behaviour (Alajmi, 2011; Chen, Chen & Kinshuk, 2009; Minbaeva and Pedersen, 2010; Tohidinia & Mosakhani, 2010). Moreover, studies have found that attitude, subjective norms, and self-efficacy significantly affect intention (Alajmi, 2011; Chennamaneni, 2006; Elogie & Asemota; 2013; Kuang, Davison & Yao, 2012; Lin and Lee, 2004; Minbaeva & Pedersen, 2010; Ryu, Ho & Han, 2003). Previous studies on knowledge sharing behaviour

have always adopted the first or second models of the theory of planned behaviour (1985, 1991) where perceived behavioural control proved to affect intention (Elogie & Asemota; 2013; Kuang et al., 2012; Tohidinia & Mosakhani, 2010). However, only one study has adopted the latest model of the theory (2002) where controllability is measured as a separate variable. In that study, Alajmi (2011) found that controllability does not affect intention.

Based on the above, and in terms of the research context on knowledge sharing, it is hypothesized that academics' knowledge sharing is significantly influenced by their intention, which is in turn is positively influenced by their attitude, subjective norms, self-efficacy, and controllability.

RESEARCH MODEL AND HYPOTHESES

Based on the theoretical framework and the past researches employing the TBP as indicated above, the current study is examining the influence of intention on knowledge sharing behaviour as its main determinant, as well as the influence of attitude, subjective norms, self-efficacy, and controllability on intention as its predictors. Thus, the following research model (Figure 1) is proposed:

Based on the theoretical and empirical background on the factors influencing knowledge sharing behaviour, the following hypotheses are proposed:

H1: Intention to share knowledge has a significant positive effect on academics' knowledge sharing behaviour
H2: Attitude has a significant positive effect on academics' intention to share knowledge
H3: Subjective norms has a significant positive effect on academics' intention to share knowledge
H4: Self-efficacy has a significant positive effect on academics' intention to share knowledge
H5: Controllability has a significant positive effect on academics' intention to share knowledge

METHODOLOGY

A cross-sectional web-based survey was used as a method to collect data from the academics working in the targeted universities in UAE. The instrument employed for this purpose was a questionnaire. The web-based survey has many benefits including overcoming time and space boundaries and ease of data entry (Batinic, Reips & Bosnjak, 2002 cited in Alajmi, 2011). Moreover, it is cost-effective in developing and distributing through an internet link (Weathington, Cunningham & Pittenger, 2010).

Sample and Sampling Technique

The setting of this research composed of 10 public universities in UAE, including federal, governmental, and semi-governmental universities. The sample consisted of academics working in those public universities. A total of 321 academics working in different faculties participated in the study. The sampling technique used for this study was the simple random sampling, which includes samples of whoever would be available at the time of conducting the research (Gay & Airasian, 2003).

Survey Instrument

A comprehensive questionnaire was created to measure the variables developed in the research model. It comprised of three sections; the first section collected demographic information about the participants. The second section collected data about the participants' knowledge sharing practice. The third section collected data about the participants' knowledge sharing behaviour and its predictors, which are attitude, subjective norms, self-efficacy, and controllability.

The measurement items used to measure the variables were developed and validated based upon Ajzen's theory of planned behaviour (1985, 1991, 2002), and other instruments validated in previous researches conducted on knowledge sharing behaviour including (Alajmi, 2011; Bock, Zmud, Kim & Lee, 2005, Chen et al., 2009; Hsu, Teresa, Yen & Chang, 2007; Ryu et al., 2003; Tohidinia & Mosakhani, 2010). The measurement items for knowledge sharing practice were developed and validated from (Alajmi et al., 2008; Al-Alawi et al., 2007; Hsu et al., 2007; Paloti, 2010; Sandhu, Jain & Umi Kalthom, 2011; Tohidinia & Mosakhani, 2010).

All items were measured using five-point Likert-scale. The scales are usually used to measure the strength degree of the respondents' attitudes and feelings about a certain subject, and have a score in the middle that allows them to feel neutral (Simonis, 2010). The scale used for the construct of knowledge sharing behaviour ranged from 'Never', 'Rarely', 'Sometimes', 'Usually', and 'Always'. Whereas the scale used for the rest of the constructs ranged from 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree', and 'Strongly Agree'.

Data Collection

Data was collected through a survey conducted online. One of the fastest techniques to collect data is the internet using an online survey either by sending an email or posting a web page. For this study, the survey was conducted online by

Table 1. Respondents' demographics

Profile	Category	Percentage
Gender	Male Female	68.5 31.5
Age	22-30 31-40 41-50 51& above	2.8 26.2 35.8 35.2
Level of Education	Bachelor Master Ph.D Post Doctorate	1.6 29.3 56.7 12.5
Position	Professor Associate Professor Assistant Professor Instructor Lecturer Other	15.9 16.5 34.9 19.9 11.2 1.6
Years of experience	0-5 6-10 11-15 16-20 21 & above	17.4 20.9 19.6 13.7 28.3

sending an email with a link of the questionnaire to the participants. The email, which was written in both English and Arabic, introduced the study to the participants inviting them to take part in the survey by answering the research questionnaire.

The questionnaire was provided in the email through a URL link that led the participants to a web page where they can answer and submit it online. Once the participants submit their answers, the data were recorded directly into a spreadsheet, which was transferred later into SPSS in order to carry out the required analysis.

In order to insure attaining the required sample size, a submission date was arranged to insure that academics would comply with it. Reminding emails were sent to the academics to answer the questionnaire. Data collection period took place from November 2012 till Mid March 2013.

Data Analysis

Using SPSS 19.0, the sample descriptive characteristics were assessed based on the demographic information. Data analysis for knowledge sharing practice was conducted using descriptive statistics of central tendency, dispersion, and frequencies. Data analysis for the research model constructs was conducted using partial least square path modeling technique (PLS-SEM). By using SmartPLS 2.0 software (Hansmann & Ringle, 2004), PLS-SEM was applied to assess the measurement and structural models, the mediating relationships, and to test the research hypotheses.

The assessment of the measurement model involved assessment of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity at indicator and construct levels (Chin, 2010). The assessment of the structural model involved assessment of the coefficient of determination, path coefficient, effect size, and predictive relevance (Chin, 2010). Assessment of the mediating

relationship is applied using PLS algorithm test on the relationship between the dependent and independent variables with and without the presence of the mediating variable. In case both tests result in significant relationships, then the mediating variable is partial mediator, while if the tests show that after the inclusion of the mediating variable the direct relationship is no longer significant, then the mediating variable is full mediator (Guenzi, Goerges & Pardo, 2009; Ida, Roshayati & Fazli, 2012).

FINDINGS

Demographics of Respondents

Table 1 displays the demographic characteristics of the participants. As seen most of the respondents were males. Their age varied from 31 to more than 51. In terms of nationality, 60% of the respondents were international, 33% were Middle Eastern, and 7% were local. Moreover, the respondents were distributed among the 10 universities with majority from the federal universities. They also distributed among the different faculties. As for the position, they ranged from teachers to professors. Finally, their academic experience ranged from less than 5 years to more than 21 years.

Knowledge Sharing Practice

The first objective of this research is to investigate academics' knowledge sharing practice. In order to measure the practice of knowledge sharing, the respondents were asked to indicate their degree of agreement to eight statements. By using descriptive statistics of central tendency, dispersion, and frequencies, the answers were analyzed. The results showed that majority of the surveyed academics either agreed or strongly agreed to the given statements indicating a great extent of knowledge sharing practice. The minimums, maximums, means, modes, and standard deviations for these statements are shown in Table 2.

In general, the respondents indicated that they accomplish certain tasks through teamwork and collaboration with other colleagues, where almost 88% agreed and strongly agreed to the statement. Meanwhile, only 3% disagreed to the statement. Again, almost 90% of respondents agreed and strongly agreed to the second statement showing that they exchange knowledge and experience while working with others, and only 2% disagreed. Almost all respondents 95% agreed and strongly agreed that they are willing to share their knowledge with other colleagues freely. Only 1.2% of them disagreed to the state-

Table 2. Descriptives of respondents' knowledge sharing practice

Statement	Min	Max	Mean	Mode	SD
I accomplish certain tasks through teamwork and collaboration with other colleagues	2	5	4.10	4	.679
I exchange my knowledge and experience while working with other colleagues	2	5	4.19	4	.661
I am willing to share my knowledge with my colleagues freely	2	5	4.46	5	.642
When I learn something new, I tell my colleagues about it	2	5	4.09	4	.771
When I need certain knowledge, I ask my colleagues	2	5	4.17	4	.708
I seek my colleagues' experience when I need to learn something	2	5	4.18	4	.721
I utilize the available tools to share my knowledge with my colleagues	2	5	4.09	4	.761
I attend and contribute in different knowledge sharing activities	2	5	4.03	4	.717

Table 3. Internal consistency reliability

Construct	Composite Reliability	Cronbach's Alpha
Knowledge Sharing Behaviour	0.9055	0.8612
Intention	0.9462	0.9289
Attitude	0.9475	0.9307
Subjective Norms	0.9082	0.8658
Self-Efficacy	0.9549	0.9409
Controllability	0.9500	0.9311

ment. The fourth statement inspected if they would tell other colleagues the new things they learn. Based on the results, 81.3% of respondents strongly agreed and agreed that they do so, while 3.4% disagreed. Almost 88% of the respondents strongly agreed and agreed that they ask their colleagues when needing certain knowledge, and almost 3% disagreed. When asked to indicate their agreement to statement inspecting seeking colleagues' experience when needing to learn something, 87.3% of the respondents strongly agreed and agreed. Meanwhile, only 3% disagreed to the statement.

Utilizing certain tools such as educational materials, manuals, boards, procedures, databases, blogs, wikis, portals, emails, internet, and intranet is an indication of practising knowledge sharing. When inspecting their usage of such tools, 83.2% of respondents strongly agreed and agreed that they use these tools, while 12.8% answered neutral and 4% disagreed. Finally, as an indication of practising knowledge sharing, the respondents were asked if they participate in various knowledge sharing activities such as meetings, discussions, CoPs, trainings, apprenticeships, workshops, conferences, seminars, brainstorming, and focus groups. Total of 83% of them strongly agreed, and agreed to this statement. However, 13.7% answered neutral, while 3.4% disagreed to the statement.

Assessment of Measurement Model

The purpose of assessing the measurement model is to evaluate its validity and reliability.

It is conducted through the following tests: (a) Indicator reliability by measuring the factor loading of each of the manifest variables, which should be above 0.4 (Hair, Ringle & Sarstedt, 2013), (b) internal consistency reliability by measuring composite reliability and Cronbach's alpha, which should be 0.7 and above (Hair, Black, Babin & Anderson, 2010), (c) convergent validity by measuring the AVE, which should be more than 0.5 (Fornell & Larcker, 1981), and (d) discriminant validity by using Fornell-Larcker's (1981) criterion where the square root of the AVE for each construct exceeds the correlations between the construct and all other constructs (Henseler, Ringle & Sinkovics, 2009).

The results of analyzing the measurement model demonstrated reliable and valid measurement model. All factors loaded above the recommended value of 0.7 demonstrating satisfactory indicator reliability. The constructs composite reliability and Cronbach's alpha values exceeded the recommended value of 0.7 indicating satisfactory internal consistency reliability as displayed in Table 3.

The constructs AVE exceeded the recommended value of 0.5 demonstrating adequate convergent validity. The square root of the constructs AVE values exceeded the correlations between the constructs and all indicators loaded higher on their own constructs indicating satisfactory discriminant validity as seen in Table 4.

Assessment of Structural Model

The purpose of assessing the structural model is to evaluate its validity and test the hypotheses.

Table 4. Convergent and discriminant validity

Construct	AVE	√AVE
Knowledge Sharing Behaviour	0.706	0.840
Intention	0.779	0.882
Attitude	0.783	0.885
Subjective Norms	0.712	0.844
Self-Efficacy	0.809	0.899
Controllability	0.826	0.909

This is achieved through the following tests: (a) the coefficient of determination (R^2) by measuring the amount of explained variance of each latent variable, which should be 0.01, 0.09, and 0.25 indicating small, medium and large exploratory power (Mitchell & Jolley, 2013); (b) path coefficient by measuring the path estimates and t-statistics, which should be 0.02, 0.15, and 0.35 indicating small, medium and large relationships (Cohen, 1988; Henseler et al., 2009); (c) effect size (f^2) by measuring the relative impact of a particular exogenous latent variable on an endogenous latent variable by means of changes in the R^2 of the latent variable, which should be 0.02, 0.15, and 0.35 indicating small, medium and large effect (Ida et al., 2012), and (d) predictive relevance (Q^2) by measuring how well observed values are reconstructed by the model and its parameter estimates, which should be higher than zero (Chin, 2010).

As seen in Tables 5 and 6 below, the results of analyzing the structural model demonstrated an adequate and valid model. The R^2 values for knowledge sharing behaviour and intention were large demonstrating strong explanatory power. Meanwhile the R^2 value for attitude was moderate demonstrating modest explanatory

power, and the R^2 value for controllability was small. The predictive relevance (Q^2) values of the dependent variables were above the recommended value zero indicating an adequate predictive relevance of the model. The effect size (f^2) values were within the recommended values ranging from 0.002 to 0.219 demonstrating small and medium effect sizes of the independent variables.

Assessment of Mediating Relationship

Mediation assessment provides accurate information whether a mediating variable actually mediates the relation between two other variables (MacKinnon & Fairchild, 2009). The assessment is done by running the PLS algorithm test on the relationship between the independent and dependent variables without the mediator and then with the mediator. Based on the results, it can be judged whether the mediator is full or partial (Guenzi et al., 2009; Ida et al., 2012).

The research model contains only one mediator that is intention. Table 7 shows the results for the mediator intention indicating that while intention fully mediates between attitude,

Table 5. Coefficient of determination and predictive relevance

Construct	R^2	Q^2
Knowledge Sharing Behaviour	0.260	0.180
Intention	0.471	0.364

Table 6. Effect size

Path	f^2	Effect Size
Attitude→ Intention	0.219	Medium
Subjective Norms → Intention	0.079	Small
Self-Efficacy →Intention	0.049	Small
Controllability → Intention	0.002	Small

subjective norms, controllability and knowledge sharing behaviour, it partially mediates between self-efficacy and knowledge sharing behaviour.

Hypotheses Testing

The research hypotheses were tested using the results of the path coefficient. Both path estimates and their t-statistics with p-values are used to support or refute the hypotheses. Path coefficient values were calculated using PLS algorithm test, while t-statistics values were calculated using bootstrapping test, and p-values were calculated using an online free calculator.

Path coefficient values of 0.02, 0.15, and 0.35 indicate small, medium and large relationships (Cohen, 1988). Meanwhile, significant t-values for a two-tailed test are 1.65, 1.96, and 2.59 at p-values 0.1, 0.05, and 0.01 respectively (Hair et al., 2013). Table 8 shows the results of the hypotheses testing. Four hypotheses were supported.

Figure 2 shows the results of the assessment of the measurement and structural models displaying the t-values on top of the arrows, the path coefficients below the arrows, and the R^2 values inside the circles.

DISCUSSION

The results revealed that academics' knowledge sharing behaviour is significantly influenced by intention to share knowledge, which is consistent with the theory of planned behaviour and with previous studies (Alajmi, 2011; Chen et al., 2009; Minbaeva & Pedersen, 2010; Tohidinia & Mosakhani, 2010). Intention to share knowledge explained 26% of the variance in knowledge sharing behaviour.

Furthermore, the results showed that academics' intention is significantly influenced by attitude towards knowledge sharing, subjective norms, and self-efficacy. This result is in accordance with the theory of planned behaviour as well as with previous studies (Alajmi, 2011; Chennamaneni, 2006; Elogie & Asemota; 2013; Kuang et al., 2012; Lin & Lee, 2004; Minbaeva & Pedersen, 2010; Ryu et al., 2003). Collectively, attitude towards knowledge sharing,

Table 7. Results of the mediator intention (INT)

IV	DV	β/t-value wzout INT	β/t-values wz INT	Mediating Effect
Attitude	KSB	β: 0.147 t: 2.640	β: -0.002 t: 0.056	Full
Subjective norms	KSB	β: 0.187 t: 3.057	β: 0.099 t: 1.634	Full
Self efficacy	KSB	β: 0.211 t: 2.860	β: 0.129 t: 1.851	Partial
Controll-ability	KSB	β: 0.088 t: 1.539	β: 0.095 t: 1.657	Full

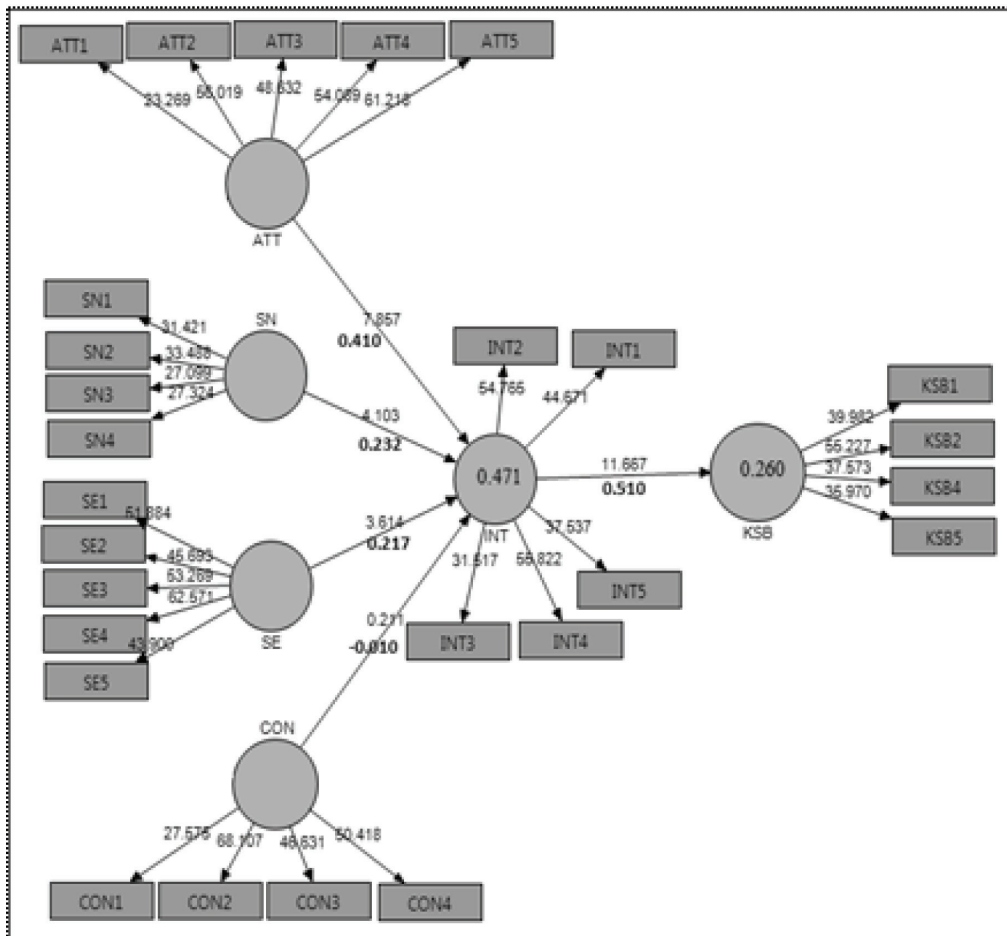*Figure 2. Results of path coefficients and t-statistics*

Table 8. Hypotheses testing

	Hypothesis	Path Coefficients	T-statistics	Result
H1	Intention → Knowledge sharing behaviour	0.510	11.667**	Supported
H2	Attitude → Intention	0.410	7.857**	Supported
H3	Subjective Norms → Intention	0.232	4.103**	Supported
H4	Self-efficacy → Intention	0.217	3.614**	Supported
H5	Controllability → Intention	-0.010	0.211	Not Supported

 * Significance at t value ≥1.96 with $p \leq 0.05$, **Significance at t value ≥ 2.59 with $p \leq 0.01$

subjective norms, and self-efficacy explained 47% of the variance in intention.

However, contrary to the theory, the results found that controllability does not have any influence on academics' intention. It can be argued that the reason behind this result is that individuals' intention to perform or not perform certain behaviour depends somehow on non-motivational factors as availability of requisite opportunities and resources such as time, money, skills, or cooperation (Ajzen, 1991).

Yet, the result in this research is consistent with that of Alajmi (2011), who found that individuals' controllability and decision to share knowledge is not a predictor of their intention. However, in her study, she examined individuals' intention to share knowledge in online communities and was conducted in an American context.

CONTRIBUTION

Although the results of the current study is consistent with those of previous studies, the findings of the current study contribute to the literature of knowledge sharing by addressing knowledge sharing behaviour in particular and among academics. Previous researches have either studied intention to share knowledge or knowledge sharing, and the few that have studied knowledge sharing behaviour have only targeted employees and managers and were conducted in Western or Southern-Asian contexts.

Not only that, but the current study also extends prior researches on the theory of planned behaviour by providing empirical evidence of the determinants of knowledge sharing behaviour in new context and new setting, i.e. higher education in UAE, which also provides significant practical implications for academic institutions and for the decision makers in UAE.

Moreover, the result that controllability does not affect intention, which is consistent with Alajmi's (2011) result, calls for further researches on this particular construct in the context of knowledge sharing behaviour.

CONCLUSION

This research successes in filling the gap in literature on knowledge sharing behaviour where the findings support previous researches that have explained the complicated nature of knowledge sharing behaviour; however, the findings contribute due to being conducted a new setting, i.e. UAE with particular emphasis on a newly explored context there, which is higher education, which has not been addressed in previous researches about knowledge sharing in the Arab world.

The need to explore knowledge sharing in higher education is reinforced by the important role of universities in creating and distributing knowledge. As well as by the major role of academics as valuable resources of creating, exchanging, and disseminating knowledge, where knowledge sharing can help them in their scholarly and research works.

REFERENCES

Abu-Ghazaleh, T. (2012). *Abu-Ghazaleh announces the UAE as knowledge and connectivity hub for the Arab region at e-AGE 2012*.

Ahmad, N., & Daghfous, A. (2010). Knowledge sharing through inter-organizational knowledge networks: Challenges and opportunities in the United Arab Emirates. *European Business Review*, *22*(2), 153–174. doi:10.1108/09555341011023506

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), Action control: From cognition to behavior (pp. 11-39). Berlin, Germany: Springer-Verlag. doi:10.1007/978-3-642-69746-3_2

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, *32*(4), 665–683. doi:10.1111/j.1559-1816.2002.tb00236.x

Ajzen, I. (2006). *Constructing a theory of planned behavior questionnaire*. Retrieved December 1, 2012, from http://people.umass.edu/aizen/pdf/tpb.measurement.pdf

Akhavan, P., Ghojavand, S., & Abdali, R. (2012). Knowledge sharing and its impact on knowledge creation. *Journal of Information & Knowledge Management*, *11*(2), 1–12. doi:10.1142/S0219649212500128

Al-Adaileh, R., & Al-Atawi, M. (2011). Organizational culture impact on knowledge: Saudi telecom context. *Journal of Knowledge Management*, *15*(2), 212–230. doi:10.1108/13673271111119664

Al-Alawi, A. I., Al-Marzooqi, N. Y., & Mohammed, Y. F. (2007). Organizational culture and knowledge sharing: Critical success factors. *Journal of Knowledge Management*, *11*(2), 22–42. doi:10.1108/13673270710738898

Al-Nahyan, N. b. M. (2012a). *Executive focus: Government commitment and investment in education, research initiatives, and improving the quality of education. UAE Minister of Higher Education & Scientific Research HH Sheikh Nahyan bin Mubarak Al Nahyan.*

Al-Nahyan, Nahyan bin Mubarak (2012b). *Education in the United Arab Emirates (UAE)*. The Prospect Group.

Al-Shammari, M. (2008). Toward a knowledge management strategic framework in the Arab region. *International Journal of Knowledge Management*, *4*(3), 44–63. doi:10.4018/jkm.2008070104

Alajmi, B. M. (2011). *The intention to share: Professional's knowledge sharing behaviors in online communities*. Doctoral thesis. The State University of New Jersey.

Alajmi, B. M., McInerney, C. R., Orzano, A. J., Tallia, A. F., Meese, A., & Vamanu, I. (2008). Knowledge sharing processes and tools in U.S.A. primary health care: Analysis of four case studies. *Proceedings of the International Conference on Knowledge Management 2008*, Al-Hawamdeh, S. et al. (Eds.), Hackensack, NJ: World Scientific doi:10.1142/9789812837578_0009

Alavi, M., & Leidner, D. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *Management Information Systems Quarterly*, *25*(1), 107–136. doi:10.2307/3250961

Albres, J. A. (2009). A practical approach to implementing knowledge management. *Journal of Knowledge Management Practice*, *10*(1).

Babalhavaeji, F., & Kermani, Z. J. (2011). Knowledge sharing behaviour influences: A case of library and information science faculties in Iran. *Malaysian Journal of Library & Information Science*, *16*(1), 1–14.

Badaracco, J. (2010). Effective knowledge sharing and its benefits. *The Point newspaper online*.

Batinic, B., Reips, U., & Bosnjak, M. (2002). Online social sciences. Seatle: Hogrefe & Hubber Publisher. In B. Alajmi (ed.), *The intention to share: Psychological investigation of knowledge sharing behavior in online communities* (pp.35-43). Doctoral dissertation. Rutgers State University of New Jersey.

Biygautane, M., & Al-Yahya, K. (2011). Knowledge management in the UAE's public sector: The case of Dubai. Paper presented at the Gulf Research Meeting Conference at the University of Cambridge, UK on July 2011.

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

Burgess, D. (2005). What motivates employees to transfer knowledge outside their work unit? *Journal of Business Communication*, *42*(4), 324–348. doi:10.1177/0021943605279485

Chaudhry, A. S., & Sivakamasundari, B. (2004). Perceptions of teachers about knowledge sharing in schools. Paper presented at the Information Resources Management Association International Conference 2004, New Orleans, USA.

Chen, I., & Chen, N.S., & Kinshuk. (2009). Examining the factors influencing participants' knowledge sharing behavior in virtual learning communities. *Journal of Educational Technology & Society*, *12*(1), 134–148.

Chennamaneni, A. (2006). Determinants of knowledge sharing behaviors: Developing and testing an integrated theoretical model. Doctoral dissertation. The University of Texas at Arlington.

Chin, W. W. (2010). How to write up and report PLS analyses. In V. E. Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods and applications* (pp. 655–690). Berlin, Germany: Springer-Verlag. doi:10.1007/978-3-540-32827-8_29

Chugh, R. (2012). Knowledge sharing with enhanced learning and development opportunities. *IEEEXplore*, 100-104.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Cummings, J. N. (2004). Work groups, structural diversity and knowledge sharing in a global organization. *Management Science*, *50*(3), 352–364. doi:10.1287/mnsc.1030.0134

Durmusoglu, S., Jacobs, M., Nayir, D., Khilji, S., & Wang, X. (2014). The quasi-moderating role of organizational culture in the relationship between rewards and knowledge shared and gained. *Journal of Knowledge Management*, *18*(1), 19–37. doi:10.1108/JKM-05-2013-0183

Earl, M. (2001). Knowledge management strategies: Toward a taxonomy. *Journal of Management Information Systems*, *18*(1), 215–233.

Egger, U.K. (2013). *Cross Organisational Knowledge Sharing*.

Elogie, A. A., & Asemota, A. E. (2013). Knowledge sharing behaviour of academics in the University of Ibadan, Nigeria. *PNLA Quarterly*, *77*(4), 1–16.

Fornell, C. G., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.2307/3151312

Gay, L., & Airasian, P. (2003). *Educational research: Competencies for analysis and applications*. NJ: Pearson Education.

Guenzi, P., Georges, L., & Pardo, C. (2009). The impact of strategic account managers' behaviors on relational outcomes: An empirical study. *Industrial Marketing Management*, *38*(3), 300–311. doi:10.1016/j.indmarman.2007.09.011

Gurbuz, T. (2008). Knowledge management in education and research: An elective course at METU. Paper presented at the 8th International Educational Technology Conference (IETC2008), 1313-1316.

Haapalainen, P., & Makiranta, A. (2013, March). Acquiring and sharing knowledge in SMEs: A case study in the manufacturing industry. *Journal of Knowledge Management Practice*, *14*(1).

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. New Jersey: Pearson education.

Hair, J. F. Jr, Ringle, C. M., & Sarstedt, M. (2013). Editorial: Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, *46*(1-2), 1–12. doi:10.1016/j.lrp.2013.01.001

Hansmann, K. W., & Ringle, C. M. (2005). Enterprise-networks and strategic success- An empirical analysis. In T. Theurl & E. C. Meyer (Eds.), *Strategies for cooperation* (pp. 133–152). Germany: Shaker Verlag.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, *20*, 277–319.

Hsu, I. (2008). Knowledge sharing practices as facilitating factor for improving organizational performance through human capital: A preliminary study. *Expert Systems with Applications*, *35*(3), 1316–1326. doi:10.1016/j.eswa.2007.08.012

Hsu, M. H., Ju, T. L., Yen, C. H., & Chang, C. M. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations. *International Journal of Human-Computer Studies*, *65*(2), 153–169. doi:10.1016/j.ijhcs.2006.09.003

Ida, R. I., Roshayati, H., & Fazli, I. (2012). PLS application in journal of operations management: A review. Paper presented at the Global Conference on Operations and Supply Chain Management, 12-13 March, Bandung, Indonesia.

Kraft, P., Rise, J., Sutton, S., & Roysamb, E. (2005). Perceived difficulty in the theory of planned behaviour: Perceived behavioural control or affective attitude? *The British Journal of Social Psychology*, *44*(3), 479–496. doi:10.1348/014466604X17533 PMID:16238850

Kuang, L. C., Davidson, E., & Yao, L. (2012). A planned behavior-based investigation of knowledge sharing in construction industry. Paper presented at the International Management and Engineering Conference.

Lin, H. F., & Lee, G. G. (2004). Perceptions of senior managers toward knowledge sharing behaviour. *Journal of Management Decision*, *42*(1), 108–125. doi:10.1108/00251740410510181

Ling, C. W., Sandhu, M., & Jain, K. K. (2009). Knowledge sharing in an American multinational company based in Malaysia. *Journal of Workplace Learning*, *21*(2), 125–142. doi:10.1108/13665620910934825

MacKinnon, D. P., & Fairchild, A. J. (2009). Current directions in mediation analysis. *Current Directions in Psychological Science*, *18*(1), 16–20. doi:10.1111/j.1467-8721.2009.01598.x PMID:20157637

McDermott, R., & O'Dell, C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management*, *5*(1), 76–85. doi:10.1108/13673270110384428

Minbaeva, D., & Pedersen, T. (2010). Governing individual knowledge-sharing behaviour. *International Journal of Strategic Change Management*, *2*(2/3), 200–222. doi:10.1504/IJSCM.2010.034414

Mitchell, M. L., & Jolley, M. J. (2013). *Research design explained* (8th ed.). CA, USA: Wadsworth Cengage Learning.

Mohamed, M., O'Sullivan, K. J., & Ribière, V. (2008). A paradigm shift in the Arab region knowledge evolution. *Journal of Knowledge Management*, *12*(5), 107–120. doi:10.1108/13673270810902975

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, *5*(1), 14–37. doi:10.1287/orsc.5.1.14

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. UK: Oxford University Press.

Paloti, R. G. (2010). *Knowledge sharing*. Retrieved January 17, 2011. http://eprints.rclis.org/bitstream/10760/15179/3/KnowledgeSharinFinal.pdf

Pangil, F., & Moi Chan, J. (2014). The mediating effect of knowledge sharing on the relationship between trust and virtual team effectiveness. *Journal of Knowledge Management*, *18*(1), 1–24. doi:10.1108/JKM-09-2013-0341

Ramlee, A. R. (2011). Knowledge sharing practices among researchers and officers of the national institutes of health Malaysia. Unpublished doctoral dissertation, International Islamic University Malaysia, Kuala Lumpur.

Reychav, I., & Weisberg, J. (2009). Good for workers, good for companies: How knowledge sharing benefits individual employees. *Knowledge and Process Management*, *16*(4), 186–197. doi:10.1002/kpm.335

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers should consider. *Journal of Knowledge Management*, *9*(3), 18–35. doi:10.1108/13673270510602746

Rowley, J., Seba, I., & Delbridge, R. (2012). Knowledge sharing in the Dubai Police Force. *Journal of Knowledge Management*, *16*(1), 1–24.

Ryu, S., Ho, S. H., & Han, I. (2003). Knowledge sharing behavior of physicians in hospitals. *Expert Systems with Applications*, *25*(1), 113–122. doi:10.1016/S0957-4174(03)00011-3

Sallis, E., & Jones, G. (2002). *Knowledge Management in Education: Enhancing learning and education*. London: Kogan Page.

Sandhawalia, B. S., & Dalcher, D. (2011). Effective knowledge sharing for competitive advantage. *Journal of Knowledge Management*, *15*(2).

Sandhu, M. S., Jain, K. K., & Umi Kalthom, A. (2011). Knowledge sharing among public sector employees: Evidence from Malaysia. *International Journal of Public Sector Management*, *24*(3), 206–226. doi:10.1108/09513551111121347

Sharma, A. (2010). Enabling knowledge management of organizational memory for groups through shared topic maps. Master dissertation. Iowa State University, UAS.

Simonis, J. (2010). *A guide to question types: An art and a science*.

Singer, P., & Hurley, J. E. (2005). The Importance of Knowledge Management Today. *ALA-APA Library Worklife Home*, *2*(6), 1–3.

Skok, W., & Tahir, Saad. (2010). Developing a knowledge management strategy for the Arab World. *Electronic Journal on Information Systems in Developing Countries*, *41*(7), 1–11.

Sveiby, K. E. (2002). A knowledge-based theory of the firm to guide strategy formulation. *Journal of Intellectual Capital*, *2*(4), 344–358. doi:10.1108/14691930110409651

Syed, S. A., Zaini, A., Noormala, A. I., & Zahariah, M. Z. (2009). Assessing knowledge sharing behaviour among employees in SMEs: An empirical study. *International Business Research*, *2*(2), 115–122.

Tohidinia, Z., & Mosakhani, M. (2010). Knowledge sharing behavior and its predictors. *Industrial Management & Data Systems*, *110*(4), 611–631. doi:10.1108/02635571011039052

Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, *20*(2), 115–131. doi:10.1016/j.hrmr.2009.10.001

Weathington, B. L., Cunningham, C. J., & Pittenger, D. J. (2010). *Research methods for the behavioral and social sciences*. Hoboken, NJ: John Wiley & Sons, Inc.

Xiao, Y. C., & Jin, Y. H. (2010). The hierarchical linear modeling of shared mental model on virtual team effectiveness. *Kybernetes*, *39*(8), 1322–1329. doi:10.1108/03684921011063619