Full Length Research Paper

Academic staff knowledge sharing intentions and university innovation capability

Muhammad Jawad Iqbal*, Amran Rasli, Low Hock Heng, Mohamad Bin Bilal Ali, Ibne Hassan and Ali Jolaee

Universiti Teknologi Malaysia, Malaysia.

Knowledge is originated from the intelligence of individuals and is visible in the tasks, systems, procedures, norm and customs and is really difficult to imitate. Knowledge economy has changed the theme of innovation management. Knowledge sharing not only reduces the cost of the production or service, but also contributes to the success of the organization because knowledge sharing helps in avoiding the mistakes and develops the ability to innovate.There exist a gap in the studies that address the knowledge sharing practices. Knowledge sharing has been found to become a beneficial for different organizations especially for the development of solutions through innovations. This study has, therefore, been conducted to find out the factors that influence academic staff's knowledge sharing intentions which develop the university's capabilities towards innovation. In order to check the factors that determine the behaviour of knowledge sharing among the academic staff, different theoretical models have been discussed that explain the individual's behaviour. On the basis of literature, 'trust' from social capital theory along with subjective norms and attitude from theory of reasoned action were used as factors influencing the knowledge sharingintentions.The data was collected by using a semi structured questionnaire. The model used for evaluation was structural equation model (SEM) and data has been analysed by using LISREL 8.70 software. The results obtained from the analysis of the data confirmed that the intensity of knowledge sharing behaviours has a positive influence on the innovative capabilities of the university.

Key words: Knowledge sharing, self efficacy, innovation.

INTRODUCTION AND BACKGROUND

Knowledge is originated from the intelligence of individuals and is visible in the tasks, systems, procedures, norm and customs and is really difficult to imitate (Davenport and Prusak, 1998). Research experts were of the opinion that the knowledge sharing is opposite to the human nature because people feared that by sharing knowledge, they will lose the power and the status in the organization (Davenport and Prusak, 1997). As identified by Gruenfeld et al. (2000), knowledge sharing not only reduces the cost of the production or service, but also contributes to the success of the organization because knowledge sharing helps in avoiding the mistakes and also develops the ability to innovate. In the past, various organizations have used

knowledge management techniques in order to get competitive advantage. Knowledge economy has changed the theme of innovation management. As a result of globalization, a gap between scientific research and its utilization has been diminished. This has developed the dual use of knowledge (Etzkowitz et al., 2000).

Number of studies conducted by the researchers like Majid and Lim (2007), Hung and Chuang (2007), Kim and Lee (2006), Koch et al. (2006), So and Bolloju (2005), Bock et al. (2005), Chen et al. (2009), Sun and Scott (2005), and Shah et al. (2009) have examined the influence of various factor that effects the knowledge sharing in the production and service sector environments. However, few researches have studied the influence of knowledge sharing on the development of innovation capability of the university. Effective knowledge sharing to support the organizational activities

_____

*Corresponding author. E-mail: jisiddiqui4@gmail.com.

become vital especially for the universities. This study has, therefore, been conducted to find out the factors that influence academic staff's knowledge sharing intentions which develop the university's capabilities towards innovation.

REVIEW OF LITERATURE

Knowledge sharing in academic organizations has now become a popular debate. Martin and Marion (2005) believed that universities' work as the basis for innovation. Knowledge worker, especially the university faculty, is the major player in the knowledge based society (Drucker, 1993). However, Kong (1999) identified that faculty members emphasize on their individual achievement rather than the attainment of common organizational objectives and goals. In academia, individualism has weakened the willingness to achieve the common knowledge sharing goals as compared to profit oriented organization. This characteristic of individualism and exclusiveness has made the knowledge sharing and knowledge management, inefficient and non-systematic in the universities.

The main purpose of this research is to search out the resources and ways through which organizations get benefit from the individual employee's knowledge for increasing the overall innovative capacity (Li et al., 2006; Nonaka and Takeuchi, 1995). Most of the literature on knowledge sharing concentrates on business firms to increase the profitability and the competitive advantage (Hou et al., 2009, Leibowitz, 2007). On the other hand, the knowledge sharing studies focusing on the area of education are very less in number (Hou et al., 2009). The reason identified by Saba and McDowell (2007) was that the education sector has not exploited the concept of knowledge management as was exploited by the other professions. This showed that the knowledge sharing has not been studied at the same pace as it was studied in other fields such as business. That is why; less information is available regarding *"knowledge sharing in an academic environment"* (Kim and Ju, 2008).

There exists a gap in the studies that address the knowledge sharing practices. Knowledge sharing has been found to become a beneficial for different organizations especially for the development of solutions through innovations. However, it is still not clear if the same results might be true for academic staff of university.

Knowledge sharing

Knowledge can be considered useful for the society once it is shared with others. The purpose of focusing the activities of knowledge sharing is to exploit every person's knowledge for a group of people (Li et al., 2006;

Nonaka and Takeuchi, 1995). Gibbert and Krause, (2002) explained sharing of knowledge as *"the willingness of individuals in an organization to share with others the knowledge they have acquired or created"* and occurs when *"one party gives some knowledge that he or she has (explicit or tacit) to another party (a person or a repository"* (Staples and Webster, 2008). Therefore, according to Tuomi (2000), knowledge sharing is a process in which number of people participates. Thus, knowledge sharing is a vital stage for successful knowledge management. Organizations are required to share their knowledge and expertise to maintain their place in the competitive market place. Hence, activities of knowledge sharing are essential processes of innovation which is the part of knowledge management. Grant (1996) stated that the most important and challengeable process in knowledge management is knowledge sharing. Knowledge can be shared by making face-to-face communications through networking with other experts, written messages, correspondences, document, etc. (Cummings, 2004; Pulakos et al., 2003).

Bock et al. (2005) have discussed three motivating factors that have influence on individual's knowledge sharing practices. These factors are: individual benefits, group benefits, and organizational benefits. Bock and Kim (2005) identified three decisive factors in knowledge sharing. These factors are: subjective norms, attitude, and organizational climate. This research has been aimed to find out the impact of knowledge sharing factors on university innovation capability. Therefore, before discussing the influencing factors that determines the behaviour of knowledge sharing among the academic staff, it is imperative to discuss the theoretical models that explain the individual's behaviour.

Theories of behaviour

Theory of reasoned action (TRA) by Ajzen and Fishbein (1980), Social Capital Theory by Bourdieu (1984) and theory of planned behaviour (TPB) by Ajzen (1991) are widely used models to discover the factors that influence behaviour. These models have, therefore, been examined in order to select the construct for this research.

Theory of reasoned action (TRA)

Theory of reasoned action by Ajzen and Fishbein has been accepted extensively (Davis et al., 1989). As per TRA, employees' attitude and subjective norms influence the intentions which resultantly develop the behaviours. According to the theory, if it is perceived that the behaviour will have a positive outcome, an individual will express positive attitude in order to perform some specific behaviour and vice versa. The theory of reasoned

action (TRA) by Fishbein and Ajzen (1975) has explained the human behaviour (Chang, 1998; Sheppard et al., 1988). TRA assumes the human being to be rationale and explains that the human behaviour is the determinant of three elements: 1) attitude toward the behaviour, 2) subjective norms, and 3) behaviour intention. Miller (2005) defined these associated factors as *"Attitude accounts for the sum of a person's beliefs about a behaviour, with specific weights given to each aspect of that behaviour",* the subjective norm consists of the opinions of people in a person's environment and behaviour intention are considered as the combination of both subjective norms and attitudes. The theory showed that these three factors are the predictors for actual behaviours. In different studies, attitude and subjective norms, independently and collectively, have shown positively relations with actual knowledge sharing (Bock et al., 2005; Kim and Lee, 2006; Koys and Decotiis, 1991; Kurland, 1995; Mathieson, 1991; Taylor and Todd, 1995; Thompson et al., 1991). TRA is considered to be successful when used on the behaviours under a volitional control (Sheppard et al., 1988). Therefore in order to predict the behaviour under incomplete volitional control, the theory of planned behaviour (TPB) was developed.

Theory of planned behavior (TPB)

The theory of planned behaviour has been developed by including a new determinant- perceived behavioural control- in theory of reasoned action. Perceived power and control belief are the determinants of perceived behavioural CONTROL. Mackenzie and Jurs (1993) explained that *"Perceived behavioural control indicates that a person's motivation is influenced by how difficult the behaviours are perceived to be, as well as the perception of how successfully the individual can, or cannot, perform the activity. If a person holds strong control beliefs about the existence of factors that will facilitate behaviour, then the individual will have high perceived control over behaviour".* According to the theory, the behavioural intentions are the combined effect of attitude, subjective norms and perceived behavioural control (Ajzen, 1991). TPB further suggested that the behaviour intention directly determines the performance of behaviour. It is assumed that if someone has strong intentions to perform behaviour, there are more chances that his/her performance goes high.

The intentions of an employee for knowledge sharing can be forecasted with high precision from the approaches toward the behaviour of knowledge sharing, the subjective norms, and the perceived behavioural control. The first approach is attitude. It is defined as negative or positive belief for the performance of some specific behaviour. The second approach is subjective norm. It is the perception developed by the people related

to some specific behaviour in question. The last approach is the perceived behavioural control. It is the degree in which a person feels that the performance or non-performance of some specific behaviour is under individuals' volitional control.

Social capital theory (SCT)

Bourdieu (1984, 1986), Coleman (1988, 1990) and Putnam (1993) defined social capital as *"the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition".* Social capital theory refers to the levels of trust that groups or individuals may have, relations based on reciprocal systems, sets of norms, and networks between social communities. The theory of social capital is based on social relations and benefits for the peoples (White, 2002).

Social capital takes different organized forms, including trust, intergenerational closure norms, and commitments within a group (Bourdieu, 1984). Generally, social capital can be seen in terms of five dimensions, trust, reciprocity-expectation, networks associations, social norms, and personal and collective efficacy (Bullen and Onyx, 2000; Bourdieu, 1984; Coleman, 1988, Paxton, 2002). These five dimensions can be studied in various forms amongst the individual, organization, community, and society.

According to the dimensions of social capital theory, trust is a social mechanism found in the arrangement of social relations. Based on Granovetter (1985), social relationships are most of the times responsible for the development of trust in economic life. He mentioned that social structure is vital not only for the establishment of social capital but also for the generation of 'trust' itself. Many researchers believed that, social capital depends on trust. The community's mutual commitment, relationships, and cooperation that describe social capital could not exist without a rationale of trust. In addition, without some foundation of trust, social capital cannot improve.

In light of the foregoing discussion, it can be assumed that people share knowledge with the people with whom they have some reciprocal relations (Thibault and Kelley, 1952). In this context, it can be considered that people share their knowledge with those who share their knowledge with them. Hall (2003) and some other researchers (Constant et al., 1994; Bock and Kim, 2002) have used the theory of social capital in order to understand the concept of knowledge sharing.

CONSTRUCTS OF THE STUDY AND HYPOTHESES

After review of the literature, it can be concluded that almost all the researchers used theories of behaviour
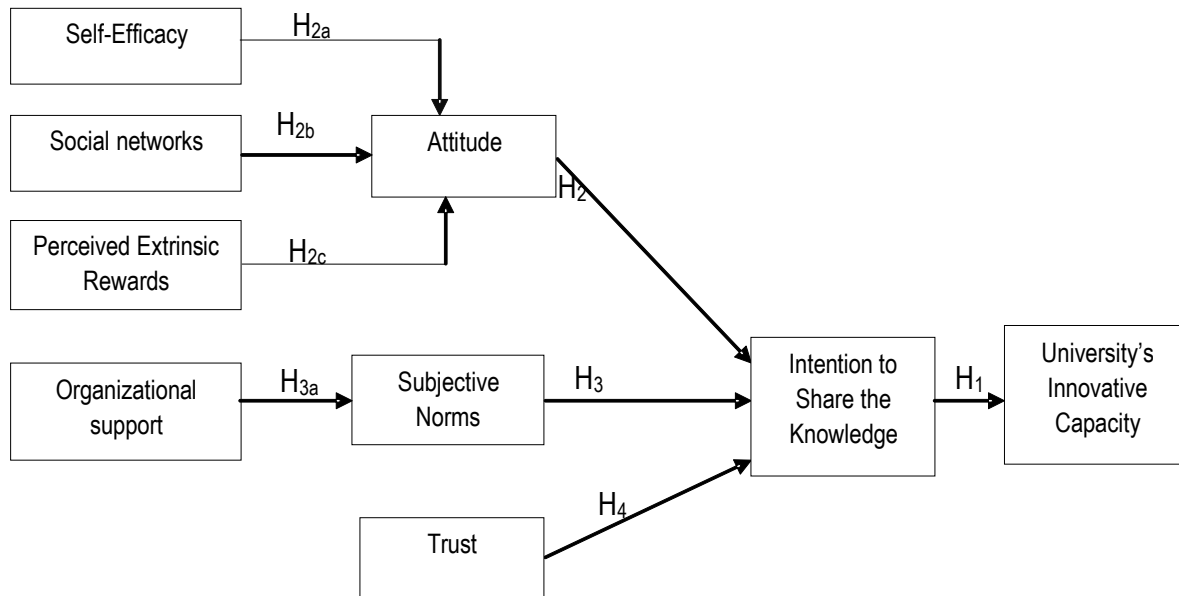
Figure 1. University innovative capacity support model.

(TRA, TPB, and SCT) to explain the concept of knowledge sharing. However, most of the researchers prefer theory of reasoned action (TRA) and theory of planned behaviour (TPB). Both TPB and TRA have been thought to be applicable in knowledge sharing research (Bock et al., 2005; So and Bolloju, 2005). However, it has been derived from different studies that 'trust' is also an important influencing factor in knowledge sharing behaviours. Therefore, 'trust' from social capital theory along with the common factors from theory of reasoned action and theory of planned behaviour, subjective norms and attitude, were used as factors influencing the knowledge sharing intentions. The selected factors are considered to have the maximum influence on knowledge sharing intention; therefore, these variables are selected as the construct of this study (Figure 1).

Attitude

Researchers identified 'attitude' as an important factor of knowledge sharing (Kuo and Young, 2008). This shows that individual's feelings or dispositions regarding knowledge sharing reflect their readiness to involve in the process of knowledge sharing. Moreover, a person's attitude also influences the behaviours (Bock et al., 2005; Bock and Kim, 2002; Constant et al., 1994; Jarvenpaa and Staples, 2001; Kolekofski and Heminger, 2003). According to Leibowitz (2007), knowledge sharing intentions are based on person's attitude to share the knowledge. Accordingly, Koys and Decotiis (1991), Kim and Lee (2006), Chang (1998), Bock and Kim (2002), Bock et al. (2005), and Ryu et al. (2003) found that attitude is the important predicator of knowledge sharing.

Therefore, for this study, we also select knowledge sharing attitude as a construct of knowledge sharing intentions.

Thus, on the basis of foregoing discussion, attitude has been selected as a construct of this study with self-efficacy, social networks and extrinsic reward as sub variables.

Self-efficacy

Self-efficacy refers to the perception a person has for his/her ability to contribute valuable knowledge and the criticality of the knowledge to be contributed. In other words, it is the level of confidence on one's knowledge (Bock et al., 2005; Lu et al., 2006). Wasko and Faraj (2005) found self-efficacy as a strong motivator for the academicians to share the knowledge with their associates. Hence, self-efficacy has been considered as the construct of attitude to share the knowledge as was identified by Bandura (1982, 1986), Igbaria and Iivari (1995), Li et al. (2008).

Social networks

According to Davenport (2005), high-performing knowledge workers get most of the valuable information from other people in their social networks. The research of Kim and Lee (2006) observed the positive effect of social networks in knowledge sharing behaviours. They, however, noticed the difference in responses vary from industry to industry. Thus this is valuable to be tested in the academic organization. Rosen (2000) recognized that

information hungry individual develop social networks. Hornik (2004) identified that social networks can considerably modify the innovation diffusion and person's adoption decisions.

Extrinsic rewards

Researchers argue that the recognition and rewards motivate employees, and they like tasks and activities when they see the rewards on successful achievement of the activity or task (Constant et al., 1994; Jarvenpaa and Staples, 2001; Cameron and Pierce, 1997). Bock and Kim (2002) argued that the knowledge sharing behaviour and anticipated extrinsic rewards has a negative relation. According to them, the reward increases the competitiveness and hence reduces the knowledge sharing intentions. Bock and Kim (2005) found that the expected rewards (for example, monetary incentives) affect the knowledge sharing attitudes and overall social networks negatively. If there exist an external reward system, it would develop competitiveness in the climate but reduces person's disposition to knowledge sharing.

Subjective norms

Kuo and Young (2008) observed that subjective norms along with attitude describe the person's intention to share the knowledge. Arthur et al. (2008) also found subjective norms as an important factor in the process of knowledge sharing and according to them; a clear understanding of subjective norms will help in improving the organizational knowledge sharing practices. Subjective norm is actually the views of people in his work environment. Therefore, as identified by Ajzen and Fishbein (1975, 1980), Kim and Lee (2006), Kurland (1995), Mathieson (1991), Taylor and Todd (1995), and Thompson et al. (1991), in this research, subjective norm has been considered as a factor which influences the knowledge sharing intentions and organizational support has been considered as a sub variable of subjective norm.

Organizational support

The organizational climate has a strong influence on knowledge-sharing behaviour (Ruggles, 1998). Bock and Kim (2005) identified the organizational climate as a determining factor for the intention to share knowledge. Thus, based on the studies it can be assumed that if the support provided by an organization, to share the knowledge through fair and trustworthy climate, is high, the probability to share the knowledge among the employees will also be high. According to the theory of self-efficacy, "people who are socially persuaded that

they possessthe capabilities to master difficult situations and are provided with provisional aids for effectiveaction are likely to mobilize greater effort than those who receive only the performance aids" (Bandura, 1977). It has also been observed that organizational support improve the ability of the employees which increase the self-efficacy (Compeau and Higgins, 1995; Igbaria and Iivari, 1995).

Trust

In the organizations, the lack of trust to share the knowledge has been developed due to the lack of reliability on the knowledge resources and uncertainty. This will develop the sense of unwillingness to share the knowledge between the employees in the organization. Hislop (2005) believed that trust can also be one of the contributing factors that reflect the commitment of employees to share the knowledge. It has been found that the employees normally share the knowledge if they trusted that the knowledge sharing will bring benefits for them and for the whole organization (Riege, 2005; Garfield, 2006; Rugullies, 2003). Chow and Chan (2008) combined the social capital theory with TRA to explain the knowledge sharing behaviours. In this study, it has also been proposed to combine 'trust' from social capital theory with the factors of TRA to check the influence on knowledge sharing intentions.

Different experts concentrate on the significance of knowledge sharing in developing innovative capacities (Liao et al., 2007; Liebowitz, 2002; Lin, 2007). An organization, in which employees contribute their knowledge, has had a broader chance to develop creative ideas, which finally will support innovative capability (Darroch and McNaughton, 2002). WP2 Partners (2002) argued that knowledge sharing will speed up the innovation process by interacting and combining the ideas simultaneously. Therefore, it can be predicted that the knowledge sharing behaviour will enhance the innovative capability of the organization. Same will be true for the universities as well; therefore, on the basis of discussion provided above, following hypotheses have been developed.

Hypothesis for the study

H_1: University academic staff's knowledge sharing intentions do not influence the university innovation capability

H_2: A person's attitude does not influence the behaviours of knowledge sharing positively.

H_{2a}: Self-efficacy has a negative impact on knowledge sharing attitudes.

H_{2b}: Social Networks influence the attitude towards knowledge sharing negatively.

Table 1. Goodness of fit result.

Goodness of fit statistics	Score of evaluation	Recommended score
Absolute indices		
Goodness of fit index (GFI)	0.93	> 0.90
Root mean square error of approximation (RMSEA)	0.048	< 0.05(close fit) < 0.08(good fit)
Incremental indices		
Comparative fit INDEX (CFI)	0.93	> 0.90
Incremental fit index (IFI)	0.93	> 0.90

H_{2c}: There exists a negative relationship between extrinsic rewards and knowledge sharing attitudes.

H_3: Subjective Norms have a negative relationship with the intentions to share the knowledge.

H_{3a}: The organizational support influences the subjective norms negatively.

H_4: Trust negatively affects the intentions to share the knowledge.

RESEARCH METHODOLOGY

This study was conducted to identify the specific factors that influence the intentions to share the knowledge which resultantly enhance the innovative capabilities of the university. To achieve the objectives, a survey method has been adopted. The data was collected by using a semi structured questionnaire adapted from the study conducted by Hilmi et al. (2009) with a Likert scale of six point (1 = completely disagree, 6 = completely agree). The coefficient has been substituted by means indicator. The population in this research is the academic staff in UniversitiTeknologi Malaysia (UTM). Sample has been selected using table given by Krejcie and Morgan (1970)[1.] Using this method, the sample size comes up to 191 and hence 191 questionnaires have been distributed. The questionnaires returned were 145, and after final scrutiny, 125 have been found complete in all respect for evaluation. Therefore, the response was around 65%. The model used for evaluation was structural equation model (SEM) and data has been analysed by using LISREL 8.70 software.

ANALYSIS

Hair et al. (2006) stated that in order to find the difference between good and bad model to evaluate different situation in SEM method, there is no simple rule,however, different absolute fit measure and incremental fit measure have been used to estimate and find the suitability of measure.The result showed that the model used is correctas it satisfies the recommended measurement standards.

[1]http://www.sageperformance.com/drjeffallen/DrA/Teaching/5480/samplesize.htm

Overall fit

Table 1 illustrates the results obtained by measuring goodness of fit model using LISREL 8.70 software. Goodness of fit (GFI) is measured to be 0.93. As per recommended measurements, it should be greater than 0.90. The root mean square error of approximation (RMSEA) value for good fit should be less than 0.08 and for close fit it should be less than 0.05. The obtained value is 0.48 which satisfies the conditions of both good and close fit. In case of incremental indices, the standard value for comparative fit index (CFI) and incremental fit index (IFI) should be greater than 0.90. The values for CFI and IFI are also calculated to be 0.93 each which again satisfies the standard conditions.

According to Hu and Bentler (1999) and McDonald's and Ho (2002), if the GFI value is observed to be over 0.90, RMSEA value less than 0.06, the model for goodness of fit fulfils the requirements of acceptability.

The over-all reliability (Cronbach's alpha) value is 0.79. On the basis of overall measurement, the research model of this study is measured to be fit as it satisfies all the recommended standard of measurement.

Causal analysis

SEM has been considered as a good measure to compare the hypothesis developed for different variable on the basis of causal relationship using the data (Table 2). Being an analytical technique, it can be used to check the relationship between complex variable so that the model will completely be described (Andrawina and Govindaraju, 2008). If the value of 't' obtained through measurement is greater than the tabled value, the positive relationship is considered to be significant. In contrast to it, if the 't' value obtained through measurement is smaller than the t-tabled value, a negative relationship is considered to be significant.

Using 0.05 as a significance level and the size of sample as 125, the tabled value of t is found to be 1.66. In order to establish the relationship between knowledge

Table 2. The interpretation of results of table value.

Variable relationship		Measured			Conclusion
From	to	R^2	t-Values	t-Values	
Self-Efficacy	KS Attitude	0.28	2.87	1.66	Positive relationship is significant
Social Networks	KS Attitude	0.34	4.36	1.66	Positive relationship is significant
Extrinsic Reward	KS Attitude	0.13	1.15	1.66	Negative relationship is significant
Org. Support	Subjective Norm	0.31	3.33	1.66	Positive relationship is significant
KS Attitudes	Intention to KS	0.35	3.24	1.66	Positive relationship is significant
Subjective Norm	Intention to KS	0.24	2.65	1.66	Positive relationship is significant
Trust	Intention to KS	0.35	3.59	1.66	Positive relationship is significant
KS Intentions	Innovation Capability	0.36	5.02	1.66	Positive relationship is significant

sharing attitudes and its construct, that is, self-efficacy, social networks and perceived extrinsic rewards, it is observed that the calculated value of t for self-efficacy is 2.87, for social networks 4.36 and for perceived extrinsic rewards, it is observed to be 1.15. This shows that self-efficacy and social networks have a positive relationship with knowledge sharing attitude. This confirms the findings of Teh et al. (2010) who showed that self-efficacy increase the knowledge sharing behaviours. On the other hand, the perceived extrinsic rewards are negatively related with knowledge sharing attitudes.

In order to establish the relationship between organizational support and subjective norms, the observed value is calculated to be 3.33 which is greater than the tabled value which shows that the value lies in the acceptance region. Hence, the organizational support is significantly related with subjective norms.

While observing the relationship between knowledge sharing intention and its constructs, that is, attitude, subjective norms and trust, the t-value is observed to be 3.24, 2.65 and 3.59 respectively. This shows that there exist strong relationship between knowledge sharing intentions and its constructs attitude, subjective norms and trust.

Once the relationships between different identified variables have been established, we finally measured the correlations between innovation capabilities and knowledge sharing intentions which is calculated to be 0.21 (p < 0.01). The t-value is measured to be 5.02 which is greater than t- tabled value of 1.66. This has therefore; confirm that the innovation capabilities of university academic staff have significant relations with knowledge sharing intentions. Stronger the intentions to share the knowledge, higher will be the innovative capabilities.

The values obtained using R^2 statistics also describe the intensity of relationship among the independent variables (self-efficacy, social networks, perceived extrinsic rewards, organizational support, knowledge sharing attitude, subjective norms, trust and knowledge sharing intentions) and dependent variables (knowledge sharing attitude, subjective norms, knowledge sharing intentions and university's innovation capability).

Conclusion

The results obtained from the analysis of the data confirmed that the intensity of knowledge sharing behaviours has a positive influence on the innovative capabilities of the university. Higher the knowledge sharing intentions, higher will be the innovation capabilities of the university. Results also showed that self-efficacy and social networks help in developing the knowledge sharing attitude which has a positive relationship with knowledge sharing intensions. The result also describes that in order to develop the intentions to share the knowledge; organizations should support the development of social networks and support such work environment which enhances the individual's knowledge sharing intentions. As observed by Gambetta (1988), trust develops the positive attitude to share the knowledge, the result of this study also confirm that the trust has a positive link in developing knowledge sharing intentions.

This research has therefore, confirmed that the knowledge sharing intentions play an important role in developing the organization's innovative capability. Moreover, the findings in this study explained that there exists a unique relationship between attitude, subjective norms, trust and knowledge sharing intentions which resultantly support the organizational innovation capacities.The result obtained during the study supports the knowledge sharing behaviour development process among the university staff. Study also suggests that favourable conditions are required towards knowledge sharing to enhance the innovation capacity of the university. The result also confirm that trust, knowledge sharing attitudes and subjective norms have a positive influence in developing university academic staff's knowledge sharing intentions which increases the innovative capacity of the university.

Future research

This study observes the growing phenomenon of

knowledge sharing which has not yet been explored completely. However, this research is limited to the universities in Malaysia. Future research can be conducted in other developing countries as well.

The findings of this study may not be true for other sections of education industry. Due to the importance of knowledge sharing, a comprehensive research can also be conducted in future with innovation as a central concept. The factors having significant relations with knowledge sharing intentions and innovation capabilities could also be researched independently as a potential predictors.

REFERENCES

Ajzen I (1991). The theory of planned behavior. Organ. Behav. Hum. Deci. Process., 50(2): 179–211.

Ajzen I, Fishbein M (1980). Understanding Attitudes and Predicting Social Behavior. Englewood Clfifs, NJ: Prentice-Hall.

Ajzen I, Fishbein M (1975). A bayesian analysis of attribution processes. Psychol. Bull., 82: 261-277.

Andrawina L, Govindaraju R (2008). KnowledgeSharing Capability, Absorptive Capacity, andInnovation: An EmpiricalStudy of Indonesia'sInformation and Communication TechnologyIndustries. In the Proceedings of Knowledge Management International Conference 2008, langkawi, Malaysia, pp. 303-309.

Bandura A (1977). Self-Efficacy: Toward a Unifying Theory of Behavioral Change. Psychol. Rev., 84(2): 191-215.

Bandura A (1982). The assessment and predictive generality of self-percepts of efficacy. J. Behav. Therapy Exp. Psychiatry, 13, 195-199.

Bandura A (1986). The explanatory and predictive scope of self-efficacy theory. J. Clin. Soc. Psychol., 4: 359-373.

Bock GW, Zmud RW, Kim YG, Lee JN (2005).Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. MIS Q., 29(1): 87-111.

Bourdieu P (1984) (1979). Distinction: A Social Critique of the Judgment of Taste. Cambridge, MA: Harvard Univ. Press

Bourdieu P (1986). The forms of capital In JG Richardson (Ed.) Handbook of theory and research for the sociology of education 241-258. New York: Greenwood.

Chang MK (1998). Predicting unethical behavior: A comparison of the Theory ofReasoned Action and the Theory of Planned Behavior. J. Bus. Ethics, 17: 433-457.

Chen IYL, Chen NS, Kinshuk (2009). Examining the Factors Influencing Participants' Knowledge Sharing Behavior in Virtual Learning Communities. ISSN 1436-4522 (online) and 1176-3647 (print). © International Forum of Educational Technology and Society (IFETS). Educ. Technol. Soc., 12 (1): 134-148.

Coleman J (1990). Foundations of social theory. Cambridge, MA: Harvard University Press.

Coleman JS (1988) "Social Capital in the Creation of Human Capital, Am. J. Sociol., (94): 95-120.

Compeau DR, Higgins CA (1995). Computer Self-Efficacy: Development of Measure and Initial Test. MIS Quart., 19(2): 189-211.

Constant D, Kiesler S, Sproull L (1994). What's mine is ours, or is it? A study ofattitudes about information sharing. Inform. Syst. Res., 5: 400-421.

Cummings JN (2004). Work Groups, structural diversity, and knowledge sharing in a global organization. Manage. Sci., 50(3): 352–364.

Davenport TH (2005). Thinking for a living: How to get a better performance and results from knowledge worker. Harvard business school press, Boston, Massachusetts.

Davenport TH, Prusak L (1997). Working knowledge: How organizations manage what they know. Harvard Business School Press Books.

Davenport T, Prusak L (1998). Learn how valuable knowledge is acquired, created, bought and bartered. Aust. Lib. J., 47: 268.

Davis F, Bagozzi R, Warshaw P (1989). User acceptance of computer technology: A comparison of two theoretical models Management science.

Gibbert M, Krause H (2002). Practice exchange in a best practice marketplace,' in Knowledge management case book: Siemen Best Practices, Davenport, T.H and Probst, G.J.B. (eds.). Publicis Corporate Publishing, Erlangen, Germany.

Gruenfeld D, Martorana P, Fan E (2000). What do groups learn from their worldliest members? Direct and indirect influence in dynamic teams. Organizational Behavior and Human Decision Processes, 82(1): 45-59.

Hair JF, Anderson RE, Tatham RL, Black WC (2006). Multivariate Data Analysis. 6th edition, Pearson Prentice Hall, Upper Saddle River, New Jersey.

Hornik R (2004). Some reflections on diffusion theory and the role of Everett Rogers. J. Health. Commun., 9: 143-148.

Hou H, Sung Y, Chang K (2009). Exploring the behavioural patterns of an online knowledge-sharing discussion activity among teachers with problem-solving strategy. Teach. Teacher Educ., 25: 101-108.

Hung YC, Chuang YH (2007). Factors affecting knowledge sharing behavior: A content analysis of empirical findings.

Igbaria M, Iivari J (1995).The Effects of Self-Efficacy on Computer Usage. Omega, 23(6), 587-605.

Jarvenpaa SL, Staples DS (2001).Exploring perceptions of organizationalownership of information and expertise. J. Manage. Inform. Syst., 18, 151-183.

Kim S, Lee H (2006): The impact of organizational context and information technology on employee information sharing capabilities. Public Administration Review, May/June 2006, pp. 370-385.

Kim S, Ju B (2008). An analysis of faculty perceptions: Attitudes toward knowledge sharing and collaboration in an academic institution. Lib. Inform. Sci. Res., 30: 282-290.

Kolekofski KE, Heminger AR (2003).Beliefs and attitudes affecting intentions toshare information in an organizational setting. Inform. Manage., 40: 521–532.

Koys DJ, Decotiis TA (1991). Inductive measures of psychological climate. Hum. Relat., 44: 573-596.

Kurland NB (1995). Ethical intentions and the theories of reasoned action and planned behavior. J. Appl. Soc. Psychol., 25: 297-313.

Leibowitz J (2007). Social networking: The essence of innovation. Lanham, MD: Scarecrow Press.

Li X, Montazemi AR, Yuan Y (2006). Agent-based buddy-finding methodology for knowledge sharing. Inform. Manage., 43: 283-296.

Li Z, Li M, Li J (2008). An Empirical Research on the Influencing Factors of Knowledge Sharing Willingness among VirtualCommunity Members.Conference proceedings of 4th International Conference on Wireless Communications, Networking and Mobile Computing, 2008, Dalian, China.ISBN: 978-1-4244-2107-7 IEEE, pp. 1- 4

Liao SH, Fei WC, Chen CC (2007). Knowledge Sharing, Absorptive Capacity andInnovation Capability: An Empirical Study of Taiwans Knowledge-Intensive Industries. J. Inform. Sci., 20(10): 1-20.

Liebowitz J (2002). Facilitating Innovation throughKnowledge Sharing: A Look atthe US NavalSurface Warfare Center-Carderock Division. J. Comput. Inform. Syst., 42(5): 1-6.

Lin FH (2007). Knowledge Sharing and FirmInnovation Capability: An Empirical Study. Int. J. Manpower, 28(3/4): 315-332.

Lu L, Leung K, Koch PT (2006). Managerial knowledge sharing: The role of individual, interpersonal, and organizational factors. Manage. Org. Rev., 2(1): 15-41.

Mackenzie, Jurs (1993). Theory of reasoned action/theory of planned behaviour, University of South Florida.

Majid S, Lim A (2007). Information and Knowledge Sharing among IT Professionals in Singapore. Abrizah Abdullah et al. (Eds.): ICOLIS 2007, Kuala Lumpur: LISU, FCSIT, pp. 373-383.

Martin JS, Marion R (2005). Higher education leadership roles in knowledge processing. Learn. Org., 12(2): 140-151.

Mathieson, K (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. Inform. Syst. Res., 2: 173-191.

sMathieson K (1991). Predicting user intentions: Comparing the technology acceptancemodel with the theory of planned behavior.

Inform. Syst. Res., 2: 173-191.

Miller JR (2005). Attitudes and beliefs lawyers have about seeking professional mental health services. ProQuest Information and Learning. Dissertation Abstracts International: Section. Sci. Eng., 65: 3717-3717.

Nonaka I Takeuchi H (1995) The Knowledge Creating Organization: how Japanese companies create the dynamics of innovation, New York, Oxford University Press.

Putnam RD (1993). The Prosperous Community: Social Capital and Public Life. Am. Prospect, 4(13).

Rosen E (2000). The anatomy of buzz. Doubleday, New York

Ryu S, Ho SH, Han I (2003).Knowledge sharing behavior of physicians inhospitals. Expert Syst. Appl., 25: 113-122.

Saba F, McDowell D (2007). Knowledge management for teachers: The collection, organization, and sharing of educational wisdom. Educ. Technol., pp. 39-44.

Sheppard BH, Hartwick J, Warshaw PR (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. J. Consum. Res., 15: 325-343.

So JCF, Bolloju N (2005). Explaining the intentions to share and reuse knowledge in the context of IT service operations. Journal Of Knowledge Management. 9(6): 30-41, Emerald Group Publishing Limited, ISSN 1367-3270 DOI 10.1108/13673270510629945.

Staples DS, Webster J (2008). Exploring the effects of trust, task interdependence and virtualness on knowledge sharing in teams. Info. Syst. J., 18: 617-640.

Sun PY-T, Scott JL (2005). An investigation of barriers to knowledge transfer. J. Knowl. Manage., 9(2): 75-90.

Taylor S, Todd P (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. Int. J. Res. Mark., 12: 137-155.

Teh PL, Chong CW, Yong CC, Yew SW (2010). Internet self-efficacy, computer self-efficacy andcultural factors on knowledge sharing behavior. Afr. J. Bus. Manage., 4(18): 4086-4095

Thompson RL, Higgin, CA, Howell JM (1991). Personal computing: Toward aconceptual model if utilization. MIS Q., pp.125-143.

Tuomi I (2000). Data is more than knowledge: Implications of the reversed knowledge hierarchy for knowledge management and organizational memory. J. Manage. Inform. Syst., 16: 103-117.

WP2 Partners (2002). Analysis of the State of TheArt, Deliverable D 2.1. "State-Of-The-Art ofKnowledge Management",Information SocietyTechnologies, ROCKET (Roadmap to Communicating Knowledge Essential for TheIndustrialEnvironment), Information SocietyTechnologies. http://rocket.vub.ac.be/public_drafts/rocket-d2.1-final-v 1 .pdf, viewed 16thAgust2007.