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Knowledge sharing behaviour of postgraduate students in University of Malaya

Knowledge sharing behaviour

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Abstract

Purpose – This research aims to examine the knowledge sharing factors that influence postgraduate students during research. The main objective is to identify the differences in knowledge sharing behaviour among the postgraduate students with the behaviour commonly found in corporate organisations.

Design/methodology/approach – This study utilises an exploratory approach to examine these phenomena. Related documents were analysed to get an overview of the factors that have been identified and examined within the study. Survey instrument was used to collect data in order to get a first-hand view of the contributing factors to knowledge sharing amongst postgraduate students.

Findings – This study found that the motivating factors for knowledge sharing among postgraduate students differ from what is found in the corporate world, due to the difference in goals of students. Factors such as extrinsic rewards had no impact on the knowledge sharing behaviour of the respondents. In addition, the institutional repositories in the university were examined as an organisational tool to facilitate the exchange and dissemination of knowledge. Within the context of this article, the institutional repositories were found to be insufficient for carrying out knowledge sharing tasks.

Research limitations/implications – This study is concerned with examining the knowledge sharing behaviour of graduate students in a higher institution. It highlights the differences in knowledge sharing behaviour of graduate students. This allows educators to plan the graduate research process of an institution with these special factors taken into consideration.

Originality/value – This study is of value to the academic community. It is especially useful when trying to align the outputs from the researchers and graduate students with the aims and goals of the institution. This is because it gives a look at the factors that may facilitate knowledge sharing behaviour in graduate students.

Keywords Knowledge sharing, University libraries, Knowledge management, Research libraries, Institutional repository, Postgraduate researchers

Paper type Research paper

Introduction

Knowledge management is defined as the process by which knowledge needed for an organisation to thrive is created, captured, shared and leveraged. Research intensive institutions such as universities are heavily reliant on knowledge which is created, captured and subsequently transformed into tacit and explicit forms (Laal, 2011). Two of the fundamental concepts of knowledge management include tacit and explicit knowledge. The primary challenge in knowledge management is how tacit knowledge embodied in the minds of the researchers may be identified, utilised and shared for



organisational use. Explicit knowledge on the other hand refers to the codified knowledge that has been captured. Nonaka and Takeuchi (1995) created a matrix indicating the tacit to explicit knowledge conversion process. Figure 1 is an adaptation of the matrix by Musulin *et al.* (2011).

The knowledge conversion matrix stresses the importance of socialisation or knowledge sharing in the knowledge conversion process. Knowledge sharing is an important aspect of knowledge management and involves making knowledge available for use within an organisation and converting it to a form that can be easily understood and utilised by others within the organisation. To enable and support that aim, most organisations utilise systems that will encourage knowledge capture, storage and dissemination. One such system is an institutional repository (IR). An IR contains in digital form the scholarly outputs of an organisation, facilitating their management and dissemination to the larger academic community. Therefore, institutional repositories are now common place in research intensive institutions that aim to store their research materials and to enhance visibility in the research landscape. This study aims to identify the enabling factors for knowledge sharing using institutional repositories and to examine the current practices in managing knowledge amongst postgraduate students. The information gathering process was a combination of surveys and document analysis in order to obtain data that could shed more light on the knowledge seeking activities of postgraduate students in terms of research process. Factors impacting their knowledge sharing behaviour are also examined.

Literature review

Knowledge, knowledge management and knowledge sharing

Knowledge is considered as one of the most strategically important resources in an organisation. Effective management of an institution’s knowledge is one of the major issues facing organisations today. Knowledge is classified into tacit and explicit knowledge. Tacit knowledge signifies the intangible knowledge embedded in the minds of people and obtained through experience. Explicit knowledge is formal knowledge that can be codified into a tangible format (Nonaka and Takeuchi, 1995).

There are various definitions of KM among the experts but the common consensus amongst them is that knowledge, both tacit and explicit must be created, captured and utilised to achieve the goals of the institution, to allow the dissemination and storage of the information for later use. It is identified as a key organisational resource (Spencer and Grant, 1996; Stewart, 1998). Educational institutions do not typically apply much knowledge management (Kim and Ju, 2008) as compared to corporate and government

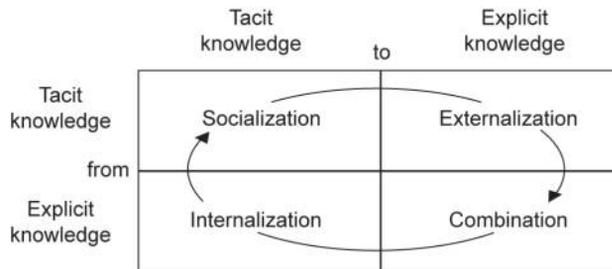


Figure 1.
Nonaka and Takeuchi
knowledge conversion
matrix

institutions. There is little institutional support for knowledge management and knowledge sharing. There are relatively few studies that examine knowledge management from the perspective of the postgraduate student. Knowledge sharing is the means of moving the knowledge from its source to the recipient (Sandhu *et al.*, 2011). Knowledge sharing is also defined as the exchange of knowledge between two or more participants in a reciprocal process. Babalhavaeji and Kermani (2011) assert that knowledge sharing is the most important facet in knowledge management and more research should be dedicated to enhancing its effectiveness. Effective knowledge sharing involves being aware of the knowledge needs of participants. It makes knowledge available to others by utilising effective systems that act as a medium for knowledge transfer (Kim and Ju, 2008).

Institutional repositories

In order to facilitate knowledge sharing, a system must be put in place to support institutional knowledge management objectives. An institutions intellectual capacity is the sum of its human capital and comprises the talent skill and knowledge of the humans in that institution. It is the greatest asset of an organisation and having an institutional repository is one way an organisation may use to facilitate the sharing of knowledge amongst its members (Doctor and Ramachandran, 2008). Motivations for implementing an institutional repository include knowledge sharing, digital preservation, depository exposure, visibility and prestige for the institution. Institutional repositories have been examined from the perspective of the faculty (Kim and Ju, 2008), and then identified as a viable tool for encouraging institution wide knowledge sharing. This is through the collaborative atmosphere that is fostered by an institutional repository. The system is meant to be an instrument that encourages exchange and reuse of knowledge. Within an academic institution, knowledge is most often produced after processing old knowledge; therefore the value of the system is highlighted.

Currently, there is a lack of variety in the content of institutional repositories, with majority of deposits being theses and dissertations of graduating students. The number is significantly lower for materials like journal articles and conference articles, which are the mainstay for students when it comes to research documents. In order to enhance knowledge sharing, the student's behaviour in relation to the research process and the usage of the institutional repositories must be examined. This is crucial in order to gauge the impact of KS behaviour among student in higher education environment.

Knowledge sharing factors and motivation

Many factors influence knowledge seeking and sharing behaviour during research. The examination of this process is essential as all technological and scientific knowledge comes about and is improved on by combining or exchange of information (Haeussler, 2010). The knowledge seeking behaviour of postgraduate students is rarely the subject of research as majority of the focus is on depositors and faculty. However, given the student to faculty ratio in any given institution, the best approach would be to foster knowledge sharing and research in graduate students in order to achieve the research aims of the institution. Thus, focus should be placed on fostering a positive knowledge sharing atmosphere in order to achieve that goal.

Research questions and hypotheses

This study sought to answer the following research questions:

- RQ1.* What are the factors that enable successful knowledge sharing among the respondents?
- RQ2.* What are the limitations of the current knowledge sharing practices among postgraduate students at University Malaya?

The following constructs were identified from the document reviews done:

- *Attitude towards behaviour:* refers to the positive or negative feelings that an individual associates with a behaviour performed. According to the theory of reasoned actions this is impacted upon by the beliefs an individual has about the consequences arising from carrying out a certain behaviour. Previous researchers have investigated the positive effects of attitudes towards knowledge sharing on individuals' intentions to share knowledge (Landrya *et al.*, 2010).
- *Social norm:* concerns itself with the social impact of an individual's decision to carry out an action; i.e. if people that are important to the individual value and carry out a certain behaviour, in this case, knowledge sharing. If sharing is the norm, amongst the peers of a researcher it will have an impact on his willingness and attitude to indulge in KS practices (Sandhu *et al.*, 2011; Landrya *et al.*, 2010). Many studies have found that accepted societal norms have an impact on the attitude to knowledge sharing and the willingness to participate in sharing knowledge during the research process.
- *Perceived usefulness:* the technology acceptance model states that the perceived usefulness of a system by a user determines their willingness to utilise a system. In terms of this research it is applicable as the research repository at the University is one of a set of systems set up to encourage and support knowledge sharing and generation within University Malaya.
- *Trust tendencies:* the more reliable and trustworthy the respondent considers others to be, the more likely he is to participate in knowledge sharing. If the graduate student considers his peers to be dependable and trustworthy, he is more likely to engage in knowledge sharing with fewer reservations (Luo, 2009).
- *Experience level:* the experience level of the researcher has an impact on how much he is willing to collaborate with other researchers. This means the experience level of the researcher determines his knowledge sharing attitude. The experience level of the researcher refers to the degree of expertise they have in conducting research (Landrya *et al.*, 2010).
- *Satisfaction:* the satisfaction derived from using the systems determines the perceived usefulness of the system. This in turn has an impact on the behavioural outcomes of the researcher (Lai *et al.*, 2008). This refers to the feelings of pleasure or displeasure derived from using the system. This construct is commonly used in IS success models. It is used in this context because an institutional repository is an information system.
- *Reward/motivation system:* the presence of a reward or motivation for carrying out a task has an impact on the willingness and attitude of the respondents in relation to the task (Babalhavaeji and Kermani, 2011). For the purpose of this

research, this variable will not be examined in depth. Extrinsic rewards refer to the organisational incentives offered in order to encourage knowledge sharing (Yang and Wu, 2008; Earl, 2001; Liebowitz, 1999).

- *Collaboration*: this refers to the willingness of the respondents to work together to achieve goals. This construct is included because knowledge sharing also takes place during team activities. Also it was thought to be useful, given the fact that the KS capacity of the IR is also being examined (Kim and Ju, 2008; Janowicz and Noorderhaven, 2002).

Based on the previous observations, the following hypothesis will be tested in this study:

- H01*. The collaboration attitude of the respondents has no impact on his knowledge sharing behaviour.
- H02*. The accepted social norm, has no impact on the knowledge sharing outcomes of the respondents.
- H03*. The level of satisfaction of the respondent has no impact on the perceived usefulness of the system.
- H04*. The perceived usefulness of the knowledge management system has no impact on the knowledge sharing behaviour of the respondents.
- H05*. A positive trust tendency has no impact on the user's attitude to knowledge sharing.
- H06*. The experience level of the researcher has no impact on his knowledge sharing behaviour.
- H07*. The presence of a reward system has no impact on the knowledge sharing attitude of the respondents.

The research framework

Given the fact that this research is focused on the knowledge seeking behaviour of graduate research students, the research will examine the factors observed in the model as well as a few other variables that were considered to be more applicable to the phenomenon being examined: i.e. the knowledge seeking behaviour of postgraduate students, based on the fact that attitude towards the current systems was also examined, a facet of the technology acceptance model was also adopted in order to better adapt this research to an online based knowledge sharing model, which is augmented with factors identified from other studies in KS.

The sample was limited to the FCSIT (Faculty of Computer Science and Information Technology) in University Malaya. The time frame allocated for the survey was one month, and the emails were sent to 300 students whose emails were obtained both from a list on the faculty website and by meeting and soliciting for their email addresses. Of this number, 144 responded, but only 143 were considered valid for analysis.

The methodology testing the research questions and hypotheses that were presented in the previous section was a combination of two surveys and a document review. An online survey using Google forms was used to reach a larger number of respondents. The

survey was carried out for the duration of six weeks in order to obtain sufficient responses. This tool was chosen because the University Malaya adopted Google's mail service for both staff and students. Therefore the integration into e-mail was seamless and encouraged more responses. Respondents with duplicate IP addresses were eliminated in order to ensure validity of the survey responses. There was no incident of incomplete results as every question was made mandatory and so the form could not be submitted without completion. The respondents comprised 41 per cent of PhD and 58.3 per cent master's degree students, from the FCSIT, University Malaya.

The survey was divided into three sections; the first was solicited based on demographic information of the respondents. It covered the discovery of data such as age, study level and gender. The second section was based on the users' attitudes and usage of the research repositories at University Malaya. Its purpose was to determine the satisfaction level of the respondents. The third was to examine the factors that enable knowledge sharing among the survey respondents. These three sections enabled the efficient data collection to allow the analysis of the study variables. Table I illustrates the demography of the respondents.

The majority of respondents were pursuing a Master's degree and the rest were PhD candidates. The difference in numbers is natural, given that there are typically a lower number of candidates that enrol for a Doctorate degree as compared to Master's degrees. This is due to the fact that higher costs and higher levels of commitment are required to achieve the degree. This information is relevant because it gives an overview of the identity of the respondents. It allows the examination of the question -is there a connection between the experience level and the study level of the respondents?

Research findings

The survey variables were tested for reliability using Cronbach's Alpha. The alpha co-efficient examined the level of internal consistency among the variables tested. The tests were split into the two themes of the survey, i.e. the questions related to the system and knowledge sharing and the knowledge sharing attitudes and behaviours of the respondents in general. This section examines the most common factors known to influence knowledge sharing behaviour. They were chosen in order to examine the differences of this phenomenon within the survey scope i.e. knowledge sharing of graduate research students. Cronbach's alpha test was used to measure the reliability level of the constructs in the study. Table II illustrates the results of running the command in SPSS statistical analysis tool.

The result of the reliability test was to 0.855, which indicates a high level of internal consistency among the themes and questions in this instrument. The second reliability test gave lower scores, the result of the test was 0.664, but this is deemed adequate and acceptable for reliability analysis, as an overly high score could indicate redundancy among the questions.

Table I.
Demographic data of
survey respondents

Educational level	Frequency	%	Valid %
Master's	84	58.3	58.3
PhD	59	41.0	41.0
Total	143	100.0	100.0

Hypotheses testing

The test carried out was the non-parametric Spearman's correlations test; it is similar to Pearson's correlation but was re-formulated from the Pearson's formula in order to ensure its suitability for data assumed to be ordinal and not normally distributed. The Spearman's correlation was used to test the hypotheses stated above. The alpha value for the testing is 0.5. The results of the tests on the hypotheses are summarised in Table III.

H1: The testing of the first hypothesis using Spearman's correlation tests revealed a positive collaboration attitude. It is related to the respondents with positive knowledge sharing attitude, the p -value is 0.269 and the r -value is 0.001. This is in line with findings by other researchers who found collaboration attitude to be highly correlated to knowledge sharing in their study (Janowicz and Noorderhaven, 2002). Perhaps this positive relationship in this study is due to the fact that in the postgraduate field, knowledge is valuable, but freely shared among peers during normal academic activities, such as a normal classroom session.

In contrast, Kim and Ju (2008) found no significant relationship between the two constructs. This is further explained by findings that revealed that knowledge hoarding is common among workers and collaboration does not necessarily lead to knowledge sharing. In addition, knowledge required is considered as their competitive

Table II.
Cronbach's alpha
reliability analysis table
for examining survey
constructs related to user
knowledge sharing
attitudes concerning the
system

<i>n</i>	Factors	Corrected item-total correlation	Cronbach's alpha if item deleted
2	Satisfaction	0.702	0.756
2	Perceived usefulness	0.748	0.731
2	Perceived value	0.685	0.761

Number	Hypothesis	Findings	Score
H01	The collaboration attitude of the respondents has no impact on his knowledge sharing behaviour	Not supported	r -value = 0.269 p -value = 0.001
H02	The accepted social norm, has no impact on the knowledge sharing outcomes of the respondents	Supported	r -value = 0.137 p -value = 0.102
H03	The satisfaction level of the respondent has no impact on his knowledge sharing attitude	Supported	r -value = 0.08 p -value = 0.342
H04	The perceived usefulness of the knowledge management system has no impact on the knowledge sharing conduct of the respondents	Supported	r -value = 0.143 p -value = 0.088
H05	A positive trust tendency has no impact on the user's attitude to knowledge sharing	Not supported	r -value = 0.564 p -value = 0.000
H06	There is no relationship between the experience level of the respondents and knowledge sharing outcome	Supported	r -value = 0.055 p -value = 0.511
H07	The presence of a reward system has no impact on the knowledge sharing attitude of the respondents	Supported	r -value = 0.123 p -value = 0.145

Table III.
Survey result
summarization table

advantage among their peers and in such a situation, there is less tendency to freely share knowledge (Kim and Ju, 2008; Liebowitz, 1999).

H2: The testing of the second hypothesis revealed that social norms have no impact on the knowledge sharing behaviour among postgraduate students in University Malaya. This means the null hypothesis is retained, the correlation co-efficient is 0.137. This finding is in contrast to findings by other researchers who found that the subjective norm had an impact on the knowledge sharing behaviour of their respondents (Luo, 2009; Ryu *et al.*, 2003). This result may be because the researchers at the faculty tend to have different research activities going on, and are encouraged to work independently, thus there is little room for the subjective norm to have an impact on them.

H3: The testing of the third hypothesis shows that the level of satisfaction amongst the respondents had no impact on their knowledge sharing attitude with the correlation co-efficient at 0.342. The null hypothesis was retained in this instance, as there was no significant relationship between those two constructs among the respondents. This is in contrast to findings by researchers who found that the satisfaction for respondents had a positive influence on their knowledge sharing attitude (Lai *et al.*, 2008). This could be explained by the fact that the institutional repositories have a one-dimensional function. The respondents were familiar with the system, but only identified it for its archival function. The system was not looked upon as a plausible source of research materials.

H4: The correlations analysis of the fourth hypothesis shows that the perceived usefulness of the system had no impact on the knowledge sharing behaviour of the respondents with the correlation co-efficient at 0.143. This could be caused by limited support for active knowledge sharing. The repository acts primarily as a storage and dissemination system for the respondents. It has no further functionality to support the other knowledge management activities for scholars. This finding is typical in an academic institution, as there is very little support for knowledge management in an academic environment. This could be caused by the individualistic nature of academic staff; striving for career advancement (Kim and Ju, 2008). Whilst there is no organisational support, this same effect would be experienced by the students/researchers and thus explains the lack of correlation between these two factors.

H5: The correlations test of the fifth hypothesis reveals that there is a positive correlation between trust and knowledge sharing among the respondents. The *r*-value is 0.564; the *p*-value is 0.000, which indicates a medium high level of correlation between the two constructs. This is in line with other findings that found trust to be a major determinant of knowledge sharing behaviour of postgraduate students (Zia-ur-Rehman *et al.*, 2011). This relationship could be explained by the fact that knowledge is a precious commodity, and to facilitate exchange amongst the respondents, trust must be present as the relationship between a knowledge donor and a recipient demands it.

H6: Testing the sixth hypothesis reveals that the respondents experience level has no impact on the knowledge sharing behaviour, the scores from the tests are: *r*value = 0.055, therefore, we retain the null hypothesis. There is no significant relationship between the two constructs. This could be due to the fact that the students actively participate in collaboration activities with more experienced academic staff. The majority of the students work with supervisors from the faculty and the influence

of working with a researcher who has more experience than the student has the result of encouraging the students to freely share knowledge. As a result, the level of experience of the knowledge receiver is not a factor.

H7: The seventh hypothesis was also tested using Spearman's correlation analysis and the results show that there was no significant relationship between extrinsic rewards and knowledge sharing among the respondents with the r -value at 0.123 and the p -value at 0.145. This could perhaps be attributed to the open and less autonomous nature of graduate students. This finding is supported by Lin in 2007, who found no significant relation between extrinsic rewards and knowledge sharing. This is different from the observations of Kim and Ju (2008) who found that the faculty at an academic institution have an individualistic mentality towards knowledge sharing. The difference in the findings could also be as a result of the fact that collaboration is the norm in scholarly pursuits among students, with group activities and assignments being a common feature. In addition, there is less need for competition among students as opposed to the faculty whose advancement hinges on their competitive advantage. Therefore, the collaborative environment for postgraduate students lowers the level of competition amongst them.

Discussion of results and findings

The majority of the respondents were familiar with the institutional repositories maintained by the institution. Due to diversity, however, better organisation and more recent content provided by external parties were preferred for use in the information seeking process of the users. The respondents indicated satisfaction with the repositories available within the institution, but were dissatisfied that some of these repositories are only available on campus. One respondent commented that "UM should provide online repository for theses, dissertations and journals. Most developed countries have done this to ensure knowledge can be shared all over the world. This move could encourage UM academic papers to be cited by other academicians. It could improve our university ranking." It becomes apparent that the content of institutional repositories is insufficient to support the knowledge sharing needs of postgraduate students. This is due to the nature of the institution's repositories, which are designed to allow storage and retrieval of documents. However, they do not support the more modern knowledge management needs of the researcher. There is no forum for communicating ideas and enabling collaboration, which causes the system to fall short of the knowledge-sharing purpose for which it was built. Moreover, it lacks adequate support for allowing scholarly citation of academic articles as noted in the response above.

Revisiting the research questions, the objectives and findings of this study are discussed and have been summarised.

Objective 1: factors that affect knowledge sharing among the respondents

Attitude to collaboration. Respondents who had a positive attitude to collaboration also had a positive knowledge sharing attitude. This could be explained by the fact that in an academic situation, both activities tend to take place at the same time. The students are already accustomed to sharing knowledge in a group situation, as that is how some of the learning activities take place. In fact, group tasks for learning and sharing knowledge are common in postgraduate education. One of the goals of an educational

institution is to foster graduates who can successfully function and contribute in a team setting.

Trust tendencies. The trust tendencies of the respondents were found to have an impact on the knowledge sharing outcomes of the respondents. This could be caused by the fact that in order to donate or accept knowledge from a peer, the respondents need to feel sure that the donor is trust-worthy and a reliable source. Without that assurance, knowledge sharing cannot take place (Zia-ur-Rehman *et al.*, 2011).

Uniqueness of knowledge. On the other hand, respondents indicated that the degree of knowledge sharing is dependent on the type of knowledge and the reciprocity between them and the knowledge seeker. In other words, they are less likely to indulge in full knowledge sharing for completely unique work. The nature of the knowledge had an impact on how willing they were to share it; in this case, they indicated from a dichotomous question that their sharing behaviour was influenced by the type of knowledge that was being shared. This is understandable given the fact that the more unique the knowledge generated is, the less likely full knowledge sharing will occur without compromising the standards and purpose of the institution (Ford and Staples, 2009).

Factors that had no impact on knowledge sharing among the respondents

Satisfaction. The satisfaction level of the users was found to have no impact on the perceived usefulness of the system. This could be because the system is not personalised and the users view it as mainly archival. As a result, they have no expectations and neutral opinions of the system. This could also be perhaps because the usage of the institutional repository is mostly geared towards faculty. There is no organisational infrastructure to encourage and enhance student usage and participation. As a result, the students have an impassive view of the repository.

Social norms. The research being done by postgraduate students is mostly independent, as a result, the influences of other students' perceptions on what knowledge sharing outcome would have no impact on them. This is especially true in the case of the students doing full research based degrees. There is little interaction during the actual research process, aside from the classes, seminars and workshops organised by the faculty. As a result, there is little opportunity to be influenced by the 'group mind' and thus, this factor has no influence on the knowledge sharing outcome in this context.

Perceived usefulness. The respondents tended to have a very neutral view on the system. Consequently, this construct had no impact on the users' knowledge sharing behaviour. This could be due to the fact that the students view it as an archive and tend not to utilise it as a knowledge source during research. Moreover, there are very few of the materials regularly used by the users during research, i.e. journal and conference articles. Thus, it is logical that the users do not utilise the repository in that way.

Personal experience level. The personal experience level of the respondents had no influence on their knowledge sharing attitude. The PhD students generally have to spend more time conducting research which translates as more expertise. This is proven by the fact that no master's students classified themselves as expert researcher, whereas a few PhD students did. Moreover, no PhD student classified themselves as novices, whereas a few Masters students did. However, the majority of masters and

PhD students classified themselves as having an intermediate level of researching expertise.

Extrinsic rewards. There was a neutral response to the question on reward systems as the focus in a research organisation is on the knowledge and its movement from generation to dissemination. This is in contrast to findings by other researchers who found that extrinsic rewards are a motivating factor for knowledge sharing. The difference could be due to the fact that amongst scholars the focus is primarily on obtaining knowledge, and there is a fair amount of socialisation among students.

Research objective 2: limitations of current knowledge sharing practices among respondents

The findings from the study reveal that the factors driving knowledge sharing among postgraduate students are different from what applies in a corporate environment. The key differences include that there is less organisational support, insufficient system support, less competition among the students which lead to a different climate for knowledge sharing.

In addition, an extrinsic reward system is a knowledge sharing motivator in the work force. However, in an academic environment, it has no significant impact on the knowledge sharing activities of the respondents. This could perhaps be because of the fact that more intrinsic rewards, such as enhanced reputation, are sought after by the respondents. The students are also depositors to the IR and enhanced reputation via citations and references could be a stronger motivator for them.

A brief commentary on the differences in KS in the corporate sector and the KS behaviour of UM postgraduate students. The factors examined in the study have different results when examined in a corporate environment. Extrinsic rewards have a strong influence on the willingness of the employees to take part in knowledge sharing activities (Amin *et al.*, 2009). As a result, organisations use incentives such as monetary incentives to encourage knowledge management at their organisations.

Trust also has a positive influence on knowledge sharing in the corporate sector. Trust is required in order for knowledge transfer activities to be successful. The attitude towards behaviour, in this case collaboration, has a positive impact in the KS outcomes in the corporate environment (Kuo and Young, 2008). The uniqueness of the knowledge being shared also has an impact on the KS outcomes in the corporate environment. Common practices, or accepted social norms in an organisation have an impact on the individual's knowledge sharing activities. Perhaps because employees are generally required to conform to the corporate culture of the organisation they belong to. As a result, they tend to go along with the knowledge management practices of (Landrya *et al.*, 2010; Sandhu *et al.*, 2011). A major issue faced by corporate staff is insufficient IT infrastructure to support their KS needs (Kuo and Young, 2008), similar to the observations of the postgraduate students at FCSIT, UM.

Conclusion

This exploratory study revealed that institutional repositories are insufficient in facilitating knowledge sharing. The institutional repositories in University Malaya lack adequate functionality to allow student participation and collaboration. From the

knowledge conversion matrix, we identify that socialisation is essential for knowledge diffusion and conversion. Socialisation or KS can be enhanced by special systems that have functionality to encourage and enable the knowledge management efforts of the researcher, such as online help forums.

Graduate students have different factors that impact their KS behaviour, which include: knowledge attributes, experience level, attitude to collaboration, KS attitude, and a number of others stated above. However, they differ from corporate workers and faculty by the fact that their KS outcome is not motivated by a need for extrinsic rewards, but rather from altruism and their goal of obtaining new knowledge.

Knowledge is a valuable resource among researchers, their attitude towards sharing knowledge is positive because generation of new knowledge is the goal and they are less motivated by the need for extrinsic rewards, and thus less likely to hoard knowledge during their research activities. The results of the study could be of some importance to educators in planning a better organisational strategy for supporting knowledge sharing amongst scholars in their respective institutions. The study is limited in the following ways; first, it only examined knowledge sharing in terms of an academic repository. It did not go into detail about knowledge sharing in other scenarios in which graduate students may find themselves. Also, the survey did not examine the possible motivators in greater detail; it examines the constructs on the surface, exploratory level. Finally, future work in this area could perhaps delve into application of theories, such as the theory of reasoned action and, the theory of planned behaviour, giving a detailed comparison and analysis to examine the best fit for this scenario.

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