INFLUENCE OF KNOWLEDGE SHARING ATTITUDE IN SRI LANKAN SOFTWARE COMPANIES

Prabodha Jayani
Student
Department of Computing and Information Systems, Faculty of Applied Sciences, Sabaragamuwa
University of Sri Lanka
Pambahinna, Belihuloya, Sri Lanka
jayanidaluwatte@gmail.com

Shanmuganathan Vasanthapriyan
Senior Lecturer
Department of Computing and Information Systems, Faculty of Applied Sciences, Sabaragamuwa
University of Sri Lanka
Pambahinna, Belihuloya, Sri Lanka
priyan@appsc.sab.ac.lk

Abstract
Knowledge sharing is a vital factor for the success of organizations, mainly for the knowledge intensive organizations such as software companies. This study is a survey-based empirical investigation which conducted to identify current status and the existing knowledge sharing barriers in software companies in the context of Sri Lanka. In order to provide a more comprehensive and complete description to the related study, quantitative research method is used to conduct the survey with staff of the development teams in selected software companies. The Theory of Planned Behaviour is applied as the basis of this study, in order to, create the relationship between knowledge sharing behaviour, intention and attitude for knowledge sharing. Questionnaire was designed considering individual, organizational and technical factors based on the previous literature covering dependent variable; attitude for knowledge sharing; and independent variables; motivation and willingness, trust, time, power relationships, expected reciprocity, communication skills, organizational culture and structure, leadership, reward systems, and technology. Structural equation modelling is used to analyse data, in order to assess both measurement model and structural model. According to findings, hypothesised associations with motivation and willingness, time, power relationships, expected reciprocity, communication skills, organizational culture and structure, and leadership were identified to have a significant impact on knowledge sharing attitude while, trust, reward systems, and technology depict no significant relationship. Findings further emphasize lack of time, improper organizational structures, power relationships, language and expected reciprocity as the main barriers in software companies.

Keywords: Knowledge sharing attitude, Structural equation modelling, Theory of Planned Behaviour

Introduction
Knowledge is a critical organizational resource and the management of this knowledge is key to long-term sustainability and success of organizations. Efficient management of knowledge is not possible without a proper process of knowledge sharing (Paulin and Sunneson, 2012; Andreasian and Andreasian, 2013). Knowledge sharing is the process which integrates and merges knowledge among each individual and teams in an organization by exchanging each other's tacit knowledge, and explicit knowledge (Paulin and Sunneson, 2012; Andreasian and Andreasian, 2013). Most of the issues arising in the software companies are identified as a result of inefficient knowledge sharing. To improve the organizational performance, knowledge should be shared in a structured way that the right knowledge is conveyed to the right person at the right time. Knowledge sharing in software companies has been attained a considerable attention of researchers in recent years. This paper focuses on identifying the current status of knowledge sharing and its barriers in software companies in the context of Sri Lanka by employing an empirical investigation. Moreover, this study focuses on the concept, 'Theory of Planned Behavior' (TPB); an extended concept of predicting behavior in any social situation; and

applies this theory as the basement of this research work. The contribution of this study consists of baseline data and recommendations which could be a source of general guidance for academic researchers in stimulating future research in the context of knowledge sharing. This research presents a description to research problem, a literature study that integrates studies of current status of knowledge sharing behavior and studies of knowledge sharing barriers in the context of software companies, overview of the research method, and analysis of the survey results, discussion of the study and finally conclusion and future research possibilities.

Research problem

Knowledge sharing in software industries has been attained a considerable attention of researchers. Unfortunately, it is hard to find studies focused directly on Sri Lankan software industry and presently, there is a gap in literature concerning knowledge sharing in software companies in the context of Sri Lanka. Therefore, it is difficult to conduct an analysis or review on knowledge sharing behavior in software industries in Sri Lanka. This study aims to fill this gap by evaluating current status of knowledge sharing behavior and existing barriers for knowledge sharing in Sri Lankan software industries using an empirical investigation. In order to achieve this goal, following research questions (RQs) are proposed; **RQ1.** What is the current status of knowledge sharing attitude in Sri Lankan software companies? **RQ2.** What are the barrier factors which affect knowledge sharing attitude in Sri Lankan software companies? **RQ3.** What is the effect from each barrier factor towards knowledge sharing attitude in Sri Lankan software companies? **RQ4.** What are the solutions and improvements to be implemented in software companies, in order to reduce the effect from each barrier factor towards knowledge sharing in Sri Lankan software companies?

Also previous research studies which focused on knowledge sharing, have identified different dimensions that affect knowledge sharing in organizations. However, a majority of previous empirical studies include a limited number of dimensions in a single study and focused mostly on qualitative perspective of the subject. Therefore, it is reasonable in the current study to analyze several dimensions that may influence the sharing of knowledge within an extended framework focusing on Sri Lankan software industry. Along with these key dimensions, based on previous studies, more importantly this research is able to recommend solutions to eliminate these barriers. It is expected that the findings derived through this study will provide useful information for both academics and practitioners to better understand knowledge sharing behavior in software companies in the context of Sri Lanka.

Review of relevant literature

Knowledge sharing in software companies

Knowledge sharing could be identified as a process between units, teams and organizations where people exchange their knowledge with others (Andreasian and Andreasian, 2013; Anthony, 2013). Software industry is much younger and knowledge intensive industry. (Kukko and Helander, 2012). It creates a lack in well-structured knowledge sharing processes in software industry. In software companies, independent, competent and creative people with a high level professional knowledge shape the business and knowledge and innovativeness are critical to stay competitive and growth (Kukko, 2013). Hence, knowledge sharing is a cornerstone for software companies for their growth and sustainability. It can be seen that many issues are arisen in knowledge sharing domain in software companies due to inefficient knowledge sharing (Ranasinghe and Jayawardana, 2011; Kharabsheh et al., 2016). If there is not available a proper knowledge sharing process, employees would proceed with the knowledge that they already have or with the knowledge that is most easily available. Even that knowledge is accurate and of good quality, sometimes it may not be good enough to achieve the success of the projects or the sustainability of today's market (Zammit et al., 2016).

Factors and barriers for knowledge sharing

Motivation and willingness is described as one of the enablers for knowledge sharing where knowledge sharing is not meaningful without both motivation to share knowledge and willingness to receive

knowledge (Seba et al., 2012; Heeager and Nielsen, 2013; Hau et al., 2013). Time allocation is described as a main enabler for knowledge sharing by many researchers because knowledge sharing is a time consuming task (Seba et al., 2012; Mas-Machuca and Costa, 2012; Kukko, 2013). As mentioned in most of the literature (Seba et al., 2012; Park and Lee, 2012; Wickramasinghe and Widyaratne, 2012; Kukko, 2013; Mitre-Hernándeza et al.), trust is known as a key antecedent of knowledge sharing and knowledge sharing between employees needs a strong culture, as well as trust and transparency all through the organization (Mitre-Hernándeza et al.). Endres and Chowdhury (2013) explain expected reciprocity as one of the significant barriers in knowledge sharing. Many researchers (Amayah, 2013; Endres and Chowdhury, 2013; Shoemaker and Stephen, 2014) further describe rewarding as an effective motivate to improve knowledge sharing among individuals while, Seba et al. (2012) suggest that employees are not especially interested in rewards. Power relationships are also taken place due to each individual tries to make their position in the organizational hierarchy (Kukko, 2013). Seba et al. (2012) suggest a strong relationship between attitude towards knowledge sharing and intention to share knowledge which is a well-proven fact according to the Theory of Planned Behavior (Stavros, 2015). Also communication skills of individuals can enable the sharing of knowledge. Languages, verbal and written communication, and absorptive capacity of individuals influence on the communication between individuals. Moreover, organizational structure has a direct influence over knowledge sharing (Phung et al., 2016) and unsuccessful contribution of companies towards knowledge sharing prevents employees from sharing knowledge with others. According to Zammit et al. (2016) the size and dispersion of organizations influence on locating the existing knowledge and conveying it to where it is needed. Power distance also has an improper impact on knowledge sharing in companies which follow a hierarchical power structure by disabling the employees to involve in informal discussions in free mind (Vasanthapriyan et al., 2017). Integrating an IT system and applying new technologies can also support the knowledge sharing process and technology can also put barriers to efficiency of knowledge sharing due to unavailability of proper technologies, technical skills and knowledge (Zammit et al., 2016).

Methods

Research design and hypothesis
Taking previous research into account and concerning insights from earlier empirical investigation into knowledge sharing in software companies, a number of hypothesis have been formulated. The proposed hypothesis are listed below; **H1.** Motivation and willingness influence on employee attitude towards knowledge sharing, **H2**. The level of trust among individuals influences on employee attitude towards knowledge sharing, **H3.** Time influences on employee attitude towards knowledge sharing, **H4.** Power relationship influences on employee attitude towards knowledge sharing, **H5.** Expected reciprocity influences on employee attitude towards knowledge sharing, **H6.** Communication skills influence on employee attitude towards knowledge sharing, **H7.** Organizational culture and structure influence on employee attitude towards knowledge sharing, **H8.** Leadership influences on employee attitude towards knowledge sharing, **H9.** Reward systems influence on employee attitude towards knowledge sharing, **H10.** Technological infrastructure influence on employee attitude towards knowledge sharing.

Questionnaire design and data collection
The primary objective of this study is to provide a more complete and a comprehensive description of the knowledge sharing and the obstacles against knowledge sharing in Sri Lankan software industries engaged in software development by following a survey based empirical research method. In order to provide a more comprehensive and complete description to the related study, quantitative research method is used to conduct the survey, which is a questionnaire based survey study.

The questionnaire was designed with three main dimensions based on previous literature; individual factors, organizational factors and technical factors (Kukko, 2013). These three dimensions were divided into eleven subsections based on the factors which affect each dimension as found in previous literature. According to previous literature, above-mentioned variables could be identified as dependent variables (attitude for knowledge sharing) and independent variables (motivation and

willingness, trust among individuals, time, power relationships, expected reciprocity, communication skills, organizational culture and structure, leadership, reward systems, technological infrastructure). Based on these dependent and independent variables the research model is created. The research model in Figure 1 shows the variables which used to design the questionnaire. First, the profile and demographics of the participants (age, gender, current position, and work experience) were questioned and continued with the questions focused on eleven subsections. Five-point Likert-type scale was used as the scaling method in order to scale the responses provided by the respondents. Respondents had to make their level of agreement for each item such as strongly agree, agree, no idea, disagree and strongly disagree. For each of these levels of agreement, assigned scores 5,4,3,2, and 1 respectively, and score 3 was considered to be the middle value, where it represents neither negative nor positive response (Vasanthapriyan et al., 2017). The purpose of introducing Five-point Likert-type scale in this survey is to measure the level of favorable attitude towards the dependent variable (attitude for knowledge sharing) with contrast to the level of each independent variable.
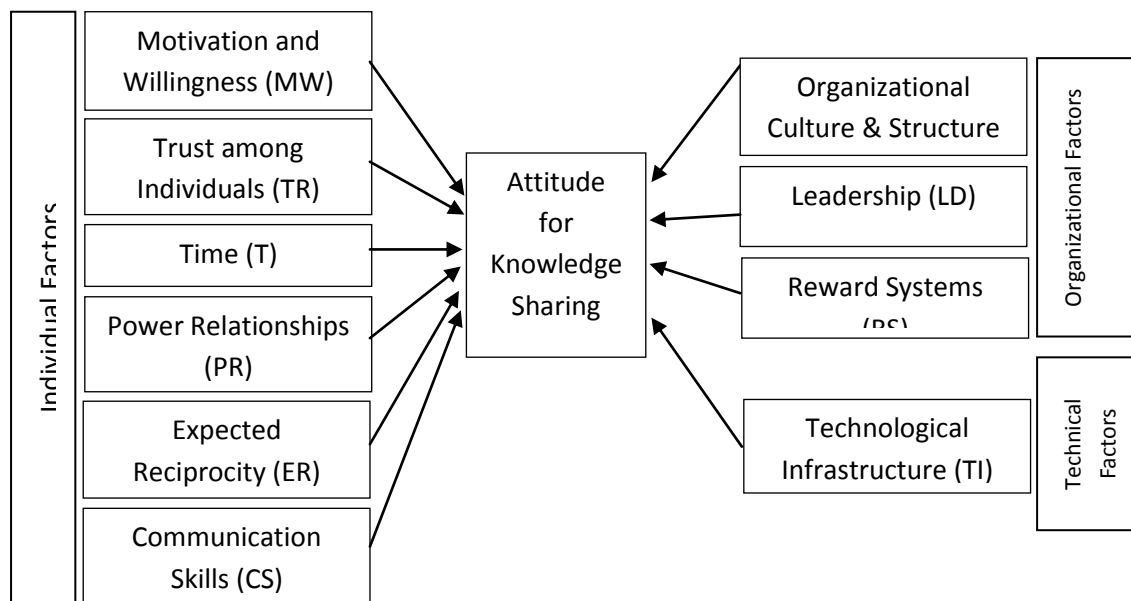

Figure 1: The Research Model

The preliminary designed questionnaire was pilot tested with 30 individuals from Sri Lankan software industries to check whether the survey items were clear, meaningful and understandable (Vasanthapriyan et al., 2017). They were asked to provide comments and feedback on the questionnaire regarding readability and understandability of the questionnaire and improvements for the design of the questionnaire. Based on their feedback minor modifications were made to the survey items such as wording and formatting. Few items were found difficult to understand by majority of the respondents. Hence, these items were modified in order to remove the ambiguity and to provide required meaning in an understandable format. Finally modified questionnaire was distributed online among employees in three selected software companies for conducting the survey study. Software companies were selected to cover major growth dimensions; organic growth, acquisition growth and network growth. This resulted in collecting overall 130 responses with a considerable amount of responses from each company. Demographic variables of the responses were analyzed using the frequency of each variable and it represented a considerable participation of both male and female respondents, which are approximately 60.8% and 39.2% respectively out of 130 respondents. Therefore, it is concerned that the results will not be biased due to influence of gender.

Data analysis
The dataset collected through questionnaires were analysed using SPSS version 20 and structural equation modelling was used in order to assess both measurement model and structural model. In this section, details related to the analysis of collected data are presented.

Measurement model analysis
Measurement model was analyzed prior to the testing of hypothesis, in order to ensure the validity and the adequacy of the used measures in the latent variables. Analysis was performed based on validity and internal consistency (Vasanthapriyan et al., 2017). Validity provides the evidence on the correctness of the assumptions made on the questions that the study was intended to answer, while reliability measures the stability and consistency of the result (Vasanthapriyan et al., 2017).

Validity analysis was performed using Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's Test of Sphericity (BTS). Value of KMO measures the adequacy of sampling, while BTS statistically tests the soudness of correlations within correlation matrix factors in general (Vasanthapriyan et al., 2017). KMO value is ranked, marvellous if 0.9s, meritorious if 0.8s, middling if 0.7s, mediocre if 0.6s, miserable if 0.5s, and unacceptable if below 0.5s (Vasanthapriyan et al., 2017). Authors selected 0.8 as the threshold to assess KMO value. Analysis produced 0.84 for the KMO value, and BTS alongside ensures the soundness of the strength of association as shown in Table 1. Hence, both tests strongly indicate that the analyzed sample size is adequate.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.841
Bartlett's Test of Sphericity	
Approximately Chi-Square	3390.532
Df	780
Sig.	0.000

Table 2: Descriptive Statistics and Reliability Analysis

Construct	Number of Items	Mean	Standard Deviation	Cronbach's Alpha	Reliability
AT	130	4.13	0.95	0.876	Very high
MW	130	3.58	0.75	0.532	Relatively high
TR	130	3.41	0.80	0.803	Very high
T	130	3.58	0.67	0.530	Relatively high
PR	130	3.51	0.93	0.827	Very high
ER	130	3.45	0.79	0.714	High
CS	130	3.47	0.73	0.629	Relatively high
OS	130	3.49	0.65	0.693	Relatively high
LD	130	3.42	0.96	0.922	Very high
RS	130	3.05	0.90	0.823	Very high
TI	130	3.28	0.71	0.731	High

Internal consistency was tested using Cronbach's alpha. In this study, 0.5 was selected as the benchmark for Cronbach's alpha for indicating ample reliability as recommended by Vasanthapriyan et al. (2017). Table 2 shows Cronbach's alpha coefficient of each construct. According to the analyzed results, Cronbach's alpha coefficient for each construct are greater tham 0.5. Therefore, internal consistency and the reliablity of the questionnaire could be cosidered high, since, reliability values are exceeding the reccommended threshold.

Correlations of the constructs are shown in Table 3. According to the depicted data, all constructs seemed to have a considerably positive correlation with each other, instead of none significant correlations between reward systems (RS) and power relationships (PR), and between leadership (LD) and power relationships (PR). Technological Infrastructure (TI) and organizational culture and

structure (OS) were identified to have the highest correlation (r=0.743, p<0.01) among all the latent variables. Also motivation and willingness (MW) and organizational culture and structure (OS) seemed to have a significant correlation (r=0.688, p<0.01 and r=0.609, p<0.01 respectively) with attitude for knowledge sharing (AT). Leadership (LD) and organizational culture and structure (OS) could be identified to have a positive correlation coefficient of 0.655. Moreover, the results reveal that each correlation has a p-value which falls under 0.01 with attitude for knowledge sharing (AT) and there is a positive correlation between dependent variable (AT) and selected independent variables. Hence, it accepts all the proposed hypothesis.

Table 3: Correlations of Constructs

Construct	AT	MW	TR	T	PR	ER	CS	OS	LD	RS	TI
AT	1										
MW	.688**	1									
TR	.414**	.528**	1								
T	.619**	.510**	.366**	1							
PR	.474**	.383**	.476**	.423**	1						
ER	.484**	.299*	.275**	.348**	.503**	1					
CS	.549**	.413**	.258**	.371**	.210*	.372**	1				
OS	.609**	.510**	.408**	.449**	.288**	.395**	.523**	1			
LD	.532**	.492**	.310**	.383**	.110	.197	.395**	.655**	1		
RS	.241**	.214*	.281**	.204*	.073	.216*	.293**	.488**	.460**	1	
TI	.484**	.456**	.398**	.365**	.264**	.408**	.503**	.743**	.595**	.482**	1

*,**. Correlation is significant at the 0.05 and 0.01 level (2-tailed) respectively.

Structural model analysis

Table 4: Summary of Hypothesis Test

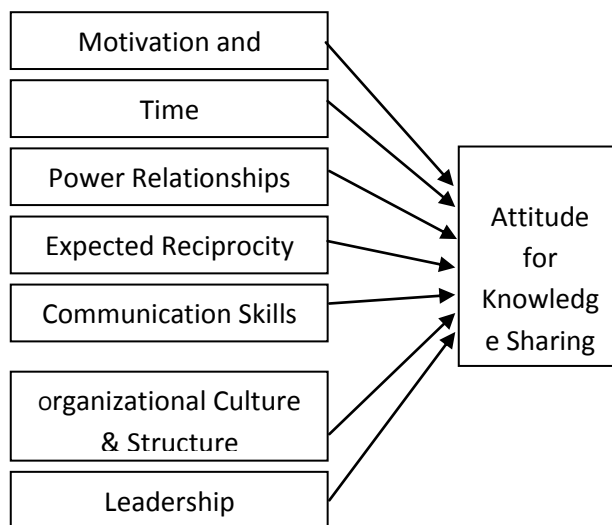| Hypothesis	Path Coefficient	Result
H1	0.330***	Supported
H2	-0.051	Not Supported
H3	0.199**	Supported
H4	0.138*	Supported
H5	0.147*	Supported
H6	0.180**	Supported
H7	0.183*	Supported
H8	0.170*	Supported
H9	-0.064	Not Supported
H10	-0.111	Not Supported

*.p<0.05   **.p<0.01   ***.p<0.001

Figure 2: Refined Research

In order to assess the structural model, hypothesis were tested using linear regression method. Then, path coefficient of the hypothesized relationships and the variance (R^2) explained by each path were estimated. According to the estimated values, H2 (β = -0.051, t-value = -0.774), H9 (β = -0.064, t-value = -1.044) and H10 (β = -0.111, t-value = -1.368) did not depict a direct influence over attitude for knowledge sharing. Therefore, H2, H9 and H10 were eliminated from the research model since they were showed as negative relationships. Other hypothesis represented a significant relationship with knowledge sharing attitude. Hence, H1, H3, H4, H5, H6, H7, and H8 were supported. The R^2 value of 0.697 and adjusted R^2 value of 0.672 (F = 27.382, p < 0.001) which is approximately 69% indicate the adequacy of the overall model in explaining the variance in attitude for knowledge sharing. Results of the analysis are shown in Table 4. Taking the results into account, the research model was refined in order to represent only the significance associations as shown in Figure 2.

Results and discussion

In considering overall results of the analysis, both positive and negative features related to knowledge sharing attitude were identified. The study has proposed an initial research model which represents factors affecting knowledge sharing attitude in software companies consists of ten associations among latent variables. According to the results of this investigation, only seven relationships which proposed in the model were supported in the context of Sri Lanka. Therefore, this model was later refined to make it fit into the Sri Lankan software companies by eliminating unsupported relationships as shown in Figure 2. According to the performed analysis, motivation and willingness, time, power relationship, expected reciprocity, communication skills, organizational culture and structure, and leadership convey a considerably positive impact on knowledge sharing attitude. This result regarding time, organizational culture and structure, and leadership is a well-treated aspect in most of the previous literature (Seba et al., 2012; Mas-Machuca and Costa, 2012; Kukko, 2013; Phung et al., 2016; Zammit et al., 2016). Most importantly, this study proposes four significant factors (motivation and willingness, expected reciprocity, power relationships and communication skills) which are not frequently included in previous research models but, mentioned important in many locations (Seba et al., 2012; Heeager and Nielsen, 2013; Hau et al., 2013; Endres and Chowdhury, 2013). Applying these factors in the proposed research model in this study, however, reveals their positive effect on knowledge sharing attitude. In contrast to previous literature, the results of this study show a deviation regarding two factors; trust and technology. Even though literature suggest these two factors as influencers on knowledge sharing attitude, this study has identified no relationship between these factors and knowledge sharing attitude.

The study considers the organizational aspect and individual aspect regarding rewards separately, as the previous research have been concluded with an ambiguity regarding this fact. Expected reciprocity was found to have a positive influence on knowledge sharing attitude. When considering the mean of expected reciprocity derived through the analysis, it shows a moderate value which falls around the decision criteria. Contrast to that, organizational aspect of rewards, such as having a reward system and rewarding employees etc. does not show a significant relationship with attitude for knowledge sharing. Hence, considering both aspects together, rewards do not have an overall positive influence over knowledge sharing attitude according to this study.

Most of the previous studies have mentioned time as a huge barrier for sharing knowledge (Seba et al., 2012; Mas-Machuca and Costa, 2012; Kukko, 2013). This study further proves this evidence. According to this study, it is found that employees do not have enough time to search and locate appropriate knowledge, as well as apply or realize that knowledge. Results show that the high pressure and tight schedules as a cause of reducing knowledge sharing. As found by authors, organizations generally provide all the required facilities such as formal, and informal spaces, resources etc., except the required time. According to majority of the respondents of this survey, they do not have enough time to attend workshops and training courses held in their organizations due to rush schedules. Moreover, employees are strictly bounded to the organizational structure and they are not allowed to go beyond this structure for acquiring the knowledge they need. When the organizations have a larger hierarchy, knowledge sharing has been negatively affected due to dispersion of knowledge.

Communication skills are not much mentioned in previous literature. But one of the recent papers (Heeager and Nielsen, 2013) have been mentioned language and absorptive capacity as barrier factors for knowledge sharing and therefore, this factor was included in the study. The study also reveals that employees face difficulties due to existing language barriers among individuals. Apart from that, power relationship was found to have a negative effect on knowledge sharing due to employees become bottlenecks in sharing knowledge as they believe that they can obtain more power by owning knowledge others do not have. Most significantly, employees avoid sharing knowledge with the purpose of making their position in the organizational hierarchy by owning specialized knowledge. Previous studies also conform to this result (Kukko, 2013; Phung et al., 2016).

Even the overall attitude of knowledge sharing has a positive contribution to sharing knowledge, these barriers act as an obstacle for efficient and effective knowledge sharing. Therefore, these factors should be concerned by the companies in order to eliminate them by providing the appropriate solutions. Sri Lankan companies generally have a multicultural environment with people who speak different languages. Hence, it is important to encourage employees to become fluency in languages which are used within the organization in order to eliminate language barriers which negatively effects on the efficiency of knowledge sharing. Moreover, organizations have to provide a prior consideration on knowledge sharing activities when allocating time in schedules and should minimize organizational structures which keep employees bounded to a specific knowledge circle. These solutions will provide a significant support to reduce most of the discussed issues in knowledge sharing in the context of Sri Lankan software companies.

Conclusion

This study mainly focuses on identifying existing knowledge sharing barriers in software companies in Sri Lanka. In this study, Theory of Planned Behavior is applied as the basis of the study and conducted a survey-based empirical investigation following the quantitative research method. The study initially proposed a model consists of ten variables which identified by literature as significant for knowledge sharing. Results of performed analysis proved three associations are unsupported and the model was refined then. The refined model supports seven associations with motivation and willingness, time, power relationships, expected reciprocity, communication skills, organizational culture and structure, and leadership. Among these seven constructs, time, and organizational culture and structure were found to have a potentially high negative impact on knowledge sharing attitude in Sri Lankan software companies and generate more barriers. Most of the barriers in knowledge sharing could be resulted due to large organizational hierarchies and tight schedules. Furthermore, power relationships and language barriers also act as obstacles to knowledge sharing.

According to the study, employees have a moderate desire of receiving benefits for sharing knowledge. Though, overall impact of rewards did not show a significant influence over increasing or decreasing knowledge sharing attitude. Literature also show an ambiguity over the significance of rewards on knowledge sharing and still there is no general agreement. Therefore, future research should be implemented to investigate the involvement of rewards in knowledge sharing. In this study, authors found that trust and technology have no significant influence on knowledge sharing attitude in the context of Sri Lanka, which is deviated from previous literature. Hence, it also paves the way to more future research aspects regarding the effect of trust and technology on knowledge sharing. In the context of results and findings of this study, following conclusions are highlighted:

- Motivation and willingness, time, power relationships, expected reciprocity, communication skills, organizational culture and structure, and leadership have a significance influence over knowledge sharing attitude.
- Lack of time, large organizational hierarchies, power relationships, language barriers and lack of willingness to obtain new knowledge due to over-estimation on personal knowledge are the major barriers in knowledge sharing in the context of Sri Lankan software companies.

- Allocating appropriate time for knowledge sharing in working schedules, improving language skills, and minimizing organizational structures which keep employees bounded to a specific knowledge circle could be solutions to overcome many obstacles.

References

Amayah, T. A. (2013). Determinants of knowledge sharing in a public sector organization. *Journal of Knowledge Management*, 17(3), 454-471.

Andreasian, G., & Andreasian, M. (2013). Knowledge Sharing and Knowledge Transfer Barriers. Master thesis.

Anthony, P., & Ezeh, A. (2013). Factors Influencing Knowledge Sharing in Software Development: A

Case Study at Volvo Cars IT Torslanda.

Endres, M., & Chowdhury, S. (2013). The Role of Expected Reciprocity in Knowledge Sharing. *International Journal of Knowledge Management*, 9(3), 1-19.

Hau, Y. S., Kim, B., Lee, H., & Kim, Y. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management*, 33(2), 356-366.

Heeager, L., & Nielsen, P. A. (2013). *Agile Software Development and the Barriers to Transfer of Knowledge: An Interpretive Case Study.* Paper presented at the Nordic Contributions in IS Research (SCIS), Lecture Notes in Business Information Processing, Berlin, Heidelberg.

Herrmann, N. (2011). Barriers for an efficient Management of Knowledge. Experiences from a Southern African Organization. *Open Journal of Knowledge Management*, 3, 30-42.

Joseph, B., & Jacob, M. (2011). Knowledge sharing intentions among IT professionals in India. *Information Intelligence, Systems, Technology and Management*, 141(1), 23–31.

Kharabsheh, R., Bittel, N., Elnsour, W., Bettoni, M., & Bernhard, W. (2016). *A Comprehensive Model of Knowledge Sharing.* Paper presented at the 17th European conference of KM, Ulster University, Northern Ireland, UK.

Kukko, M., & Helander, N. (2012). *Knowledge sharing barriers in growing software companies.* Paper presented at the Hawaii International Conference on System Sciences, Maui, HI, USA.

Kukko, M. (2013). Knowledge sharing barriers in organic growth: A case study from a software company. *Journal of High Technology Management Research*, 24(1), 18-29.

Lin, H. F. (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of Information Science*, 33, 135–149.

Mas-Machuca, M., & Costa, C. M. (2012). Exploring critical success factors of knowledge management projects in the consulting sector. *Total Quality Management & Business Excellence*, 23(11-12), 1297-1313. doi: 10.1080/14783363.2011.637778

Mitre-Hernándeza, H. A., Mora-Sotoa, A., López-Portillob, H. P., & Lara-Alvareza, C. Strategies for fostering Knowledge Management Programs in Public Organizations. Retrieved from https://docopdf.com/strategies-for-fostering-knowledge-management-semantic-schol.html.

Park, J., & Lee, J. (2012). Knowledge sharing in information systems development projects: Explicating the role of dependence and trust. *International Journal of Project Management*, 32(1), 153–165.

Paulin, D., & Sunneson, K. (2012). Knowledge Transfer, Knowledge Sharing and Knowledge Barriers – Three Blurry Terms in KM. *Electronic Journal of Knowledge Management*, 10(1), 81-91.

Phung, V. D., Hawryszkiewycz, I., & Binsawad, M. H. (2016). *Classifying knowledge-sharing barriers by organizational structure in order to find ways to remove these barriers.* Paper presented at the

Eighth International Conference on Knowledge and Systems Engineering (KSE), Hanoi, Vietnam.

Ranasinghe, G., & Jayawardana, A. K. L. (2011). Impact of knowledge sharing on project success in the Sri Lankan software industry. *Sri Lankan Journal of Management*, 16(1).

Seba, I., Rowley, J., & Lambert, S. (2012). Factors affecting attitudes and intentions towards knowledge sharing in the Dubai Police Force. *International Journal of Information Management*, 32(1), 372-380.

Shoemaker, N., & Stephen, F. (2014). Can Universities Encourage Students' Continued Motivation for Knowledge Sharing And How Can This Help Organizations?. *Journal of College Teaching & Learning*, 11(3). doi: 10.19030/tlc.v11i3.8757

Stavros, K. (2015). Theory of Planned Behaviour: the Intention-Behaviour Relationship and the Perceived Behavioural Control (PBC) Relationship with Intention and Behaviour. *International Journal of Strategic Innovative Marketing*, 2(3). doi: 10.15556/IJSIM.02.03.004

Vasanthapriyan, S., Xiang, J., Tian, J., & Xiong, S. (2017). Knowledge synthesis in software industries: a survey in Sri Lanka. *Knowledge Management Research & Practice,* 15(3), 413-430. doi: 10.1057/s41275-017-0057-7

Wickramasinghe, V., & Widyaratne, R. (2012). Effects of interpersonal trust, team leader support, rewards, and knowledge sharing mechanisms on knowledge sharing in project teams. *The Journal of Information and Knowledge Management Systems*, 42(2), 214-236.

Zammit, J. P., Gao, J., & Evans, R. (2016). *A Framework to Capture and Share Knowledge Using Storytelling and Video Sharing in Global Product Development.* Paper presented at the 12th IFIP International Conference on Product Lifecycle Management (PLM), IFIP Advances in Information and Communication Technology, Doha, Qatar.