International Journal of Engineering & Technology, 7 (4.15) (2018) 186-194



International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET



Research paper

A Review of Individual Factors on Knowledge Sharing: Evidence from the Empirical Literature

Salah Shehab*, Rabiah Eladwiah Abdul Rahim, Salina Daud

College of Business Management and Accounting, Universiti Tenaga National, Sultan Haji Ahmad Shah Campus, 26700 Muadzam, Shah, Pahang, Malaysia

College of Graduate Studies, Universiti Tenaga Nasional, Jalan IKRAM-UNITEN, 43000 Kajang, Selangor Darul Ehsan, Malaysia

*Corresponding Author e-mail: aqrabwei.84@gmail.com

Abstract

Knowledge sharing is considered to be an essential concept and a determinant of success regarding knowledge management. The current paper reviews the most relevant quantitative studies, within the context of individual-level knowledge sharing. The main aim of this paper is to identify the relevant individual factors that influence knowledge sharing. Furthermore, it seeks to identify relevant theories, previously used in literature, that communicate a theoretical understanding of individual levels of knowledge sharing. The researchers searched through five well-known databases using a combination of keywords related to the study context. By applying filtration procedures to the articles gathered from the selected databases, the literature survey revealed 31 most relevant articles. As a result of reviewing the selected articles, it has been indicated that the factors that most affect knowledge sharing include trust, reciprocity, self-efficacy, altruism, and reputation. These factors, studied through different contexts, have been found to significantly affect the behavior of individuals in terms of sharing knowledge. Furthermore, it has been found that the social exchange theory has been repeatedly used. It has been concluded that the resulted antecedents may influence the knowledge sharing of individuals and consider these factors by the decision makers will motivate the individual's intention to knowledge sharing.

Keywords: Knowledge sharing, Individuals behavior, Sharing behavior, Success Factors, knowledge management, Edutechgrp

1. Introduction

Knowledge sharing (KS) refers to the act of sharing knowledge by one person, group or organization to another (Vuori & Okkonen, 2012). Sharing knowledge in one organization, or through other organization in a given context, is considered to be an essential factor for successful organizational performance (Abzari et al., 2016). It is important to interact with and to share experiences among individuals within an organization, in order to formulate new knowledge. Consequently, this activity offers benefits, to the organization, particularly in form of a competitive edge (LEE, 2017). Knowledge sharing is considered to be the most important factor of knowledge management techniques and has also been identified within organizations as being the most essential factor when adopting a new management style (Ra'ed Masa'deh, 2016). Knowledge management refers to facilitating and managing knowledge-related activities, such as the creation, capture, transformation, and use of knowledge. It can also be defined as an emerging set of organizational design and operational principles, processes, organizational structures, applications, technologies, which facilitate knowledge workers in leveraging their creativity and capabilities to deliver business value (Taleb, 2015). Additionally, to make organizations successful, it is very important to manage knowledge well. Nowadays, organizations tend to face difficulties in surviving without proper knowledge management initiatives. As such, ensuring successful knowledge

management within an organization is highly dependent on individual's knowledge sharing in their organization or among organizations to improve their work style. Therefore, successful organizations lean towards implementing effective knowledge management techniques.

Researchers and business professionals have provided much more attention to knowledge sharing after it has been recognized as being the main and the most difficult activity for knowledge management (Yassin et al., 2013). This aspect is in line with how individuals communicate and how information flows within the context of knowledge sharing (Bouma, 2011; Meri et al., 2018). Knowledge sharing activities can occur through face to face communications and interactions in organizations (Cross et al., 2001). Sharing particular knowledge from different individuals and organizations can help enhance and increase performance, while also reducing the challenges faced by an organization (Casimir et al., 2012). Moreover, it is recognized as being a communication strategy which enables individuals to apply knowledge sharing both within and outside of an organization (Casimir et al., 2012). Organizations are able to benefit greatly from improving the quality of knowledge sharing activities used by their employees. Effective knowledge sharing relies on the employees' ability to identify the knowledge they have acquired (Hanif, Kamran, Khan, & Yunfei, 2016). As recognized by Carmeli et al.,(2013) knowledge sharing is a type of social exchange behavior, which can help make knowledge more understandable and easier for individuals to use. The impact of

individual factors on knowledge sharing has been commonly emphasized in the literature (Nielsen, 2016).

The present paper tried to survey the most important factors in term of individuals factors in knowledge sharing context to open avenues for researchers about the currently used factors and as such to apply it in different contexts of usage. Therefore, this paper aims to provide an understanding of individual factors of knowledge sharing in across several contexts. Firstly, a literature survey has been conducted across several different disciplines, investigating how individual factors related to knowledge sharing and the most significant factors which influence knowledge sharing. This is important because, there is a rising need to concentrate on factors which influence knowledge sharing, thereby providing a guide to focus more on the different contexts which need to be investigated. The researchers in the present study have aimed to identify factors that which influence knowledge sharing and to identify the most relevant theories which can correlate with individual factors for knowledge sharing.

2. Literature Review

Knowledge sharing is regarded as a strategic method for gaining competitive advantages. Ritala, et al., (2015) highlighted that successful knowledge sharing can expand the competitive advantages and can increase organizational efficiency. Many newly established organizations seek knowledge to be gained from experienced individuals in order to succeed (Meri et al., 2017b). Furthermore, it is worth pointing out that knowledge sharing increases the level of service quality within organizations (Ismail and Yusof, 2010). Various researchers have observed that there are several factors that can support successful knowledge sharing, referred to as individual factors (Ali & Dominic, 2016; Goh & Sandhu, 2017; Jinyang, 2015; Mafabi et al., 2017; Meri et al., 2017a; Radaelli et al., 2014; Roba et al., 2016).

It is commonly recognized that the benefits of increased knowledge sharing are greater in some countries and reduced in others. Therefore, sharing information among various organizations with different perspectives improves various sectors quality. A study by Radaelli et al. (2014) shed light on the relationship between knowledge and innovation by adopting micro-level opinions, with the study's findings showing that individuals who share their knowledge are much more likely to adopt progressive work behaviors. Moreover, the findings by Ali and Dominic (2016) have shown that knowledge sharing is indeed essential for organizations. It can especially help minimize training costs because when knowledge sharing is adopted, employees learn from each other and correspondingly improve their knowledge and skills.

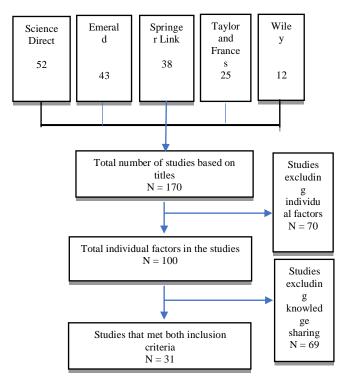
As this study aims to investigate individual factors, differing views will be inspected and discussed. Previous studies in organizations have mostly emphasized the potential of addressing these factors. This is because these factors can support and increase knowledge sharing through various means. The researchers' review of the literature has revealed that most previous models constructed to evaluate knowledge sharing across different sectors have been limited by a number of set factors. Therefore, individual factors play a key role in necessitating knowledge sharing.

3. Method

In this paper, the researchers conducted a literature review using a systematical search method by searching through five databases, namely, Science Direct, Emerald, Taylor and Francis, Wiley and Springer Link. A number of keywords were searched by using the Boolean operators, (OR/AND), specifically "Knowledge sharing" OR "Sharing behavior" AND "Individuals behavior" AND "Theory" AND "Success factors". Furthermore, the inclusion

criteria for the selected articles were that they must have: 1) been written in the English language; 2) been published from 2012 to 2017; 3) used a quantitative research design; and 4) sought to investigate the individual factors that influence knowledge sharing, in different sectors. Fig#1 shows the search results from each database and the filtration process applied.

The inclusion criteria that has been considered in the filtration process included that studies were 1) about individual factors, and 2) about knowledge sharing or knowledge sharing behavior. In total,170 published articles and papers were selected by considering their headings or titles. Out of the 170 articles, 52 were from Science Direct, 43 from Emerald, 12 from Wiley, 34 from Springer and 25 from Tayler publisher. After reading the abstracts of all 170 papers, 70 papers were initially removed because they did not relate to the desired "Individual factors" content. After further screening, the remaining 100 papers, the researcher removed 69 articles after reviewing their content in detail, as they did not relate to Knowledge sharing. 31 papers were selected for the review, after all, the excluding processes were completed as shown in Appendix A.



4. Results and Discussion

The identified articles studied ranged across several contexts; including, healthcare, organization, education, and SMEs domains. There are several individual factors, which have studied previously, through, which has been determined; that the studied factors have an individual is knowledge sharing behavior from various perspectives. Table 1 illustrates a list of 21 factors frequently used in various studies, across different contexts.

Drawing from the identified factors from the studies in Table 1, it was noticed that there are some factors which are used more frequently than others, due to their strong impacts. These factors has been recognized to facilitate the knowledge sharing behaviours of the individuals in different contexts, which in turn draw the importance of considering such factors. However, more study is needed to criticise the essential factors in each context. From 15 of the 31 reviewed articles, trust was considered to be one of the most frequently utilized factors, whereby it was shown to have a positive effect on constructing knowledge sharing (Ali and Dominic 2016;

Chai, Das, and Rao 2014; Dereje Roba, Worku Jimma 2016; Jinyang 2015; Ma et al. 2014; Park and Lee 2014; Zhang et al. 2017; Ologbo and Knight 2015). From the review it could be noticed that the second most studied factor was reciprocity, having been applied nine times, and shown to have a positive correlation to KS (Abzari et al., 2016; Chai et al., 2014; Goh and Sandhu, 2017; Hassandoust et al., 2011; Jinyang, 2015; Ma et al., 2014; Park and Lee, 2014; Xi Zhang et al., 2014; Xing ZhangLiuChen et al., 2017). Next were the self-efficacy, altruism, reputation and management support factors, each studied four times. In addition to the aforementioned factors, subjective norms, behaviors, and rewards were also studied three times each. While, attitude, ability, and empathy were each studied two times. The least referenced factors were willingness, knowledge assets, servant leadership, presentism, affiliation, empowering leadership, user satisfaction, abusive supervision and network centrality, each studied only one time (Alali and Salim, 2013; Goh and Sandhu, 2017; Jinyang, 2015; Lo, 2015; Radaelli et al., 2014; Shaari et al., 2015; Spiller, 2016; Wei-Li Wu & LEE, 2017). Based on this review's finding, it can be concluded that these factors were significant, as they positively affect KS, having been utilized frequently in this context. It was also noticed that some of these factors were rarely used, but still had a positive effect on knowledge sharing.

Furthermore, it was noticed that these factors were used in various sectors. In other words, the organization sector articles include firms, universities, and small and medium-sized enterprises (SMEs) as a part of the organization domain. Table 2 shows the list of theories used in the studies, namely the Decomposed Theory of Planned Behaviour, the Theory of Reasoned Action, the Theory of Relationship Maintenance, the Social Cognitive Theory, the Social Role Theory, the Experiential Learning Theory, and the Theory of Planned Behaviour, the Institutional Theory, the Knowledge-Based Theory, the Agency Theory, the Motivation Theory, and the Theory of Belonging.

The Social Exchange Theory (SET) has been identified as being the most common theory used in the current context. According to this theory, interpersonal interaction is a process, where different parties perform activities and exchange beneficial sources with each other. Social exchange and interactions among colleagues are crucial for encouraging knowledge sharing (Goh and Sandhu, 2017).

The findings of this paper showed that the knowledge sharing behaviour is highly predicted by the individuals' factors, as a key element to facilitate their psychological beliefs. These factors may influenced by the organizations environments, personal diffusion of innovation, or even the social pressure to influence their knowledge sharing and thus back in a good work practices. The beliefs of individuals can be attitudinal beliefs, behavioural beliefs, or cognitive beliefs, which draw the success of individuals in changing their behaviours and their intention to share the knowledge within their organizations or among different organizations AJZEN 1980. As such, this paper shows the path for researcher to select the most relevant antecedents that may change the beliefs on individuals.

Table 2: Theories Used in previous studies related to Knowledge Sharing

Theory used	References
The Decomposed Theory of Planned Behaviour	Chennamaneni et al. (2012), Shaari et al. (2015), Ali and Dominic. (2016), Mafabi et al. (2017)
The Theory of Reasoned Action.	Alali & Salim. (2013), Hassandoust et al. (2011)
The Social Exchange Theory.	Radaelli et al. (2014), Park & Lee. (2014), Ing-long Wu et al. (2013), Kim et al. (2015), Tuan & Behavior. (2016), Lo. (2015), Yan et al. (2016), Goh & Sandhu. (2017), Wei-Li Wu & LEE. (2017), Mura et al. (2016)
The Theory of Relationship	Park & Lee. (2014)

Maintenance.	
The Social Cognitive Theory	Chai et al. (2014), Xi Zhang et al. (2014), Jinyang. (2015), Shaari et al. (2015)
The Social Role Theory.	Chai et al. (2014)
The Experiential Learning Theory.	Khosravi & Ahmad. (2014)
The Theory of Belonging.	Majchrzak et al. (2014)
The Social Capital Theory.	Shaari et al. (2015)
The Institutional Theory.	House et al. (2015)
The Knowledge- Based Theory.	McGrane. (2016)
The Social Capital Theory.	Xing ZhangLiuChen et al. (2017)
The Motivation Theory.	Xing ZhangLiuDeng et al. (2017), Xing ZhangLiuChen et al. (2017)

5. Conclusion

This research has helped investigate the most influential factors related to knowledge sharing (KS). It was found that some of the factors were repeatedly referenced in studies, including as reciprocity, trust, reputation, self-efficacy, altruism, and management supports. Other factors were less frequently used but had a significant role in the literature when compared to other factors such as ability, attitude, behavioural control, and reward. Additionally, some factors also related to the social exchange theory in conjunction with individuals' factors which had a significant effect in the context of knowledge sharing. As a result, this study's objectives have been achieved to highlight the most frequently used factors or antecedents within the general context of knowledge sharing. On the other hand, the most commonly used theories in this field have been identified. Scholars need to critically identified more factors in each context to facilitate the knowledge sharing of individuals in each context, also, it can be further used by researchers to help in developing new models based on defined aspects.

References

- [1] Abzari, Mehdi, Shahin, Arash, Abasaltian, Ali. (2016). Studying the Impact of Personality Constructs on Employees 'Knowledge Sharing Behavior Through Considering the Mediating Role of Intelligent Competencies in Project-Oriented Organizations. Canadian Center of Science and Education, 10(6), 194. https://doi.org/10.5539/mas.v10n6p194
- [2] Alali, Haitham, Salim, Juhana. (2013). Virtual Communities of Practice Success Model to Support Knowledge Sharing Behaviour in Healthcare Sector. *Procedia Technology*, 11(Iceei), 176–183. https://doi.org/10.1016/j.protcy.2013.12.178
- [3] Ali, Arif Abdelwhab, Dominic, P.D.D. (2016). Organizational and individual factors impact on knowledge sharing practice: The association with cost reduction. 2016 3rd International Conference on Computer and Information Sciences (ICCOINS), 536–541. https://doi.org/10.1109/ICCOINS.2016.7783272
- [4] Bouma, Sjoerd. (2011). Smarter Knowledge Sharing, (962256).
- [5] Carmeli, Abraham, Gelbard, Roy, Reiter-Palmon, Roni. (2013). Leadership, creative problem-solving capacity, and creative performance: The importance of knowledge sharing. *Human Resource Management*, 52(1), 95–121.
- [6] Casimir, Gian, Lee, Karen, Loon, Mark. (2012). Knowledge sharing: influences of trust, commitment and cost. *Journal of Knowledge Management*, 16(5), 740–753.
- [7] Chai, Sangmi, Das, Sanjukta, Rao, H. Raghav. (2014). Factors Affecting Bloggers' Knowledge Sharing: An Investigation Across Gender SANGMI. *Journal of Management Information*, 28(3), 309–342. https://doi.org/10.2753/MIS0742-1222280309
- [8] Chennamaneni, Anitha, Teng, James T.C., Raja, M.K. (2012). A unified model of knowledge sharing behaviours: theoretical development and empirical test. *Behaviour & Information*

- Technology, 31(11), 1097-1115.
- [9] Cross, Rob, Parker, Andrew, Prusak, Laurence, Borgatti, Stephen P. (2001). Knowing what we know:: Supporting knowledge creation and sharing in social networks. *Organizational Dynamics*, 30(2), 100-120.
- [10] Faizuniah Pangil, Joon Moi Chan. (2014). The mediating effect of knowledge sharing on the relationship between trust and virtual team effectiveness, 18(1), 92–106. https://doi.org/10.1108/JKM-09-2013-0341
- [11] Goh, See-kwong, Sandhu, Manjit-singh. (2017). Affiliation, Reciprocal Relationships and Peer Pressure in Knowledge Sharing in Public Universities in Malaysia, 9(7), 290–298. https://doi.org/10.5539/ass.v9n7p290
- [12] Hanif, Muhammad Imran, Hanif, Muhammad Shahzad, Kamran, Asif, Khan, Rabia, Yunfei, Shao. (2016). KNOWLEDGE SHARING AND INNOVATION PERFORMANCE AFFECTED BY HR GENERIC STRATEGIES: AN EMPIRICAL STUDY OF SMES IN CHINA AND PAKISTAN. Journal of Business, 12(1), 272–306.
- [13] Hassandoust, Farkhondeh, Logeswaran, Rajasvaran, Farzaneh Kazerouni, Mehdy. (2011). Behavioral factors influencing virtual knowledge sharing: theory of reasoned action. *Journal of Applied Research in Higher Education*, 3(2), 116–134.
- [14] Hejase, Hussin Jose, Hejase, Hussin J., Haddad, Ziad, Hamdar, Bassam, Ali, Rola Al. (2014). Knowledge Sharing: Assessment of Factors Affecting Employee 'Motivation and Behavior in the Lebanese Organizations Knowledge Sharing: Assessment of Factors Affecting Employee 'Motivation and Behavior in the Lebanese Organizations. Resarch Gate, 12(3), 1549–1593. https://doi.org/10.9734/JSRR/2014/8107
- [15] House, Mortimer, Wang, Hsing-kuo, Tseng, Jung-feng, Yen, Yufang, Tseng, Jung-feng. (2015). How do institutional norms and trust influence knowledge sharing? An institutional theory. *Taylor & Francis*, (April 2015), 37–41. https://doi.org/10.1080/14479338.2014.11081994
- [16] Ismail, Mohd Bakhari, Yusof, Zawiyah M. (2010). The Impact of Individual Factors on Knowledge Sharing Quality. *Journal of Organizational Knowledge Management*, 13, 1–12. https://doi.org/10.5171/2010.327569
- [17] Jinyang, Li. (2015). Knowledge Sharing in Virtual Communities: A Social Exchange Theory Perspective, 8(1), 170–183.
- [18] Khosravi, Arash, Ahmad, Mohammad Nazir. (2014). Examining antecedents of knowledge-sharing factors on research supervision: An empirical study, 12(4), 783–813. https://doi.org/10.1007/s10639-014-9354-4
- [19] Kim, Seckyoung Loretta, Kim, Myungsun, Yun, Seokhwa. (2015). Knowledge Sharing, Abusive Supervision, and Support: A Social Exchange Perspective. Group & Organization Management, 40(5), 599–624. https://doi.org/10.1177/1059601115577514
- [20] Lee, Hyun Sook, Hong, Seong Ae. (2014). Factors Affecting Hospital Employees' Knowledge Sharing Intention and Behavior, and Innovation Behavior. Osong Public Health and Research Perspectives, 5(3), 148–155. https://doi.org/10.1016/j.phrp.2014.04.006
- [21] Lee, Jung-chieh, Shiue, Yih-chearng, Chen, Chung-yang. (2016). Examining the impacts of organizational culture and top management support of knowledge sharing on the success of software process improvemen, 54, 462–474.
- [22] Liang, Ting-peng. (2008). Can Social Exchange Theory Explain Individual Knowledge-Sharing Behavior? A Meta-Analysis. International Conference on Information Systems.
- [23] Lo, Sheng-Wei Lin Louis Yi-Shih. (2015). Article information: Mechanisms to Motivate Knowledge Sharing: Integrating the Reward Systems and Social Network Perspectives. *Journal of Knowledge Management*, 19(2), 212–235.
- [24] Ma, Zhenzhong, Huang, Yufang, Wu, Jie, Dong, Weiwei, Qi, Liyun. (2014). What matters for knowledge sharing in collectivistic cultures? Empirical evidence from China. JOURNAL OF KNOWLEDGE MANAGEMENT, 18(5), 1004–1019. https://doi.org/10.1108/JKM-06-2014-0252
- [25] Mafabi, Samuel, Nasiima, Sentrine, Muhimbise, Edgar Mutakirwa, Kaekende, Francis, Nakiyonga, Caroline. (2017). The Mediation Role of Intention in Knowledge Sharing Behavior. *Journal of Information and Knowledge Management Systems*, 47(2), 172–193. https://doi.org/10.1108/VJIKMS-02-2016-0008
- [26] Majchrzak, Ann, Faraj, Samer, Kane, Gerald C., Azad, Bijan. (2014). The contradictory influence of social media affordances on online communal knowledge sharing. *Journal of Computer*-

- Mediated Communication, 19(1), 38-55.
- [27] McGrane, Stephen J. (2016). Knowledge Sharing in Multicultural Organizations. Walden University.
- [28] Meri, Ahmed, Hasan, Mohamad Khatim, Safie, Nurhizam. (2017a). SUCCESS FACTORS AFFECTING THE HEALTHCARE PROFESSIONALS TO UTILIZE CLOUD COMPUTING SERVICES. Asia-Pacific Journal of Information Technology and Multimedia, 6(2), 31–42.
- [29] Meri, Ahmed, Hasan, Mohamad Khatim, Safie, Nurhizam. (2017b). Towards Utilizing Cloud Health Information Systems: A Proposed Model. *Journal of Engineering and Applied Sciences*, 12(SI 8), 8397–8408.
- [30] Meri, Ahmed, Hasan, Mohamad Khatim, Safie, Nurhizam. (2018). The Impact of Organizational Structure and System Settings on the Healthcare Individuals' Perception to Utilize Cloud Services: A Theoretical Literature Survey. *Journal of Engineering and Applied Sciences*, 13(4), 888–897. https://doi.org/10.3923/jeasci.2018.888.897
- [31] Mura, Matteo, Mura, Matteo, Lettieri, Emanuele, Lettieri, Emanuele, Radaelli, Giovanni, Radaelli, Giovanni, ... Spiller, Nicola. (2016). Behavioural operations in healthcare: a knowledge sharing perspective. *International Journal of Operations & Production Management*, 36(10), 1222–1246.
- [32] Nielsen, Liana Razmerita Kathrin Kirchner Pia. (2016). Article information: What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication.
- [33] Ologbo, Andrew C., Knight, Michael B. (2015). Knowledge sharing in a multi-nationality workforce: Examining the factors that influence knowledge sharing among employees of diverse nationalities, 34(3), 149=165. https://doi.org/10.3233/HSM-150844
- [34] Park, Jun-gi, Lee, Jungwoo. (2014). Knowledge sharing in information systems development projects: Explicating the role of dependence and trust. *JPMA*, 32(1), 153–165. https://doi.org/10.1016/j.ijproman.2013.02.004
- [35] Ra'ed Masa'deh. (2016). A Jordanian Empirical Study of The Associations Among Transformational Leadership, Transactional Leadership, Knowledge Sharing, Job Performance, and Firm Performance: A Structural Equation Modelling Approach 1. Journal of Management Development, 35(5), 681–705.
- [36] Radaelli, Giovanni, Lettieri, Emanuele, Mura, Matteo, Spiller, Nicola. (2014). Knowledge Sharing and Innovative Work Behaviour in Healthcare: A Micro-Level Investigation of Direct and Indirect Effects. CREATIVITY AND INNOVATION MANAGEMENT, 23(4), 400–414.
- [37] Ritala, Paavo, Olander, Heidi, Michailova, Snejina, Husted, Kenneth. (2015). Knowledge sharing, knowledge leaking and relative innovation performance: An empirical study. *Technovation*, 35, 22–31.
- [38] Roba, Dereje, Jimma, Worku, Diriba, Chala. (2016). Individual, Organizational and Technological Factors Affect Knowledge Sharing Practices in Assosa Hospital, Ethiopia. EUROPEAN ACADEMIC RESEARCH, (5), 2286–4822.
- [39] Rutten, Werner, Harry, Joyce Blaas-franken, Rutten, Werner, Blaas-franken, Joyce, Martin, Harry. (2016). The impact of (low) trust on knowledge sharing. *Journal of Knowledge Management*, 20(2), 199–214. https://doi.org/10.1108/JKM-10-2015-0391
- [40] Shaari, Roziana, Bakri, Norhani, Rahman, Ayesha Abdul. (2015). Antecedents of Knowledge Sharing Behavior among Nurses: Towards Research Agenda. Procedia - Social and Behavioral Sciences, 171, 635–641. https://doi.org/10.1016/j.sbspro.2015.01.171
- [41] Spiller, Matteo Mura Emanuele Lettieri Giovanni Radaelli Nicola. (2016). Behavioural operations in healthcare: a knowledge sharing perspective Matteo, 36(10), 1222–1246.
- [42] Taleb, AlShaima. (2015). A Framework for Knowledge Sharing, Firm Innovation Capability and Competitive Advantage in the UAE. In European Conference on Knowledge Management (p. 879). Academic Conferences International Limited.
- [43] Tuan, Luu Trong. (2016). Knowledge Sharing in Public Organizations: The Roles of Servant Leadership and Organizational Citizenship Behavior. *International Journal of Public Administration*, 40(4), 361–373. https://doi.org/10.1080/01900692.2015.1113550
- [44] Vuori, Vilma, Okkonen, Jussi. (2012). Knowledge sharing motivational factors of using an intra-organizational social media platform. *Journal of Knowledge Management*, 16(4), 592–603.
- [45] Wu, Ing-long, Chuang, Cheng-hung, Hsu, Chien-hua. (2013).

- Information sharing and collaborative behaviors in enabling supply chain performance: A social exchange perspective. *Intern. Journal of Production Economics*, 148, 122–132. https://doi.org/10.1016/j.ijpe.2013.09.016
- [46] Wu, Wei-Li, LEE, YI-CHIH. (2017). Empowering group leaders encourages knowledge sharing: integrating the social exchange theory and positive organizational behavior perspective.
- [47] Yan, Zhijun, Wang, Tianmei, Chen, Yi, Zhang, Han. (2016). Knowledge Sharing in Online Health Communities: A Social Exchange Theory Perspective. *Information & Management*, 53(5), 643–653. https://doi.org/10.1016/j.im.2016.02.001
- [48] Yassin, N.A., Hammond, T.M., Lunniss, P.J., Phillips, R.K.S. (2013). Ligation of the intersphincteric fistula tract in the management of anal fistula. A systematic review. *Colorectal Disease*, 15(5), 527–535.
- [49] Zhang, Xi, Ordóñez, Patricia, Pablos, De, Xu, Qingkun. (2014).

- Culture effects on the knowledge sharing in multi-national virtual classes: A mixed method, 31, 491–498.
- [50] Zhang, Xing, Liu, Shan, Chen, Xing, Zhang, Xing, Liu, Shan, Chen, Xing. (2017). Social capital, motivations, and knowledge sharing intention in health Q&A communities. *Management Decision*, 55(7), 1536–1557.
- [51] Zhang, Xing, Liu, Shan, Deng, Zhaohua, Chen, Xing. (2017). Knowledge sharing motivations in online health communities: A comparative study of health professionals and normal users. Computers in Human Behavior, 75, 797–810. https://doi.org/10.1016/j.chb.2017.06.028

Table 1: Individuals' factors in knowledge sharing

						14	bie 1;				s in kn ctors i			e sharing	,						
Authors	Ability	Willingness	Attitude	Subjective Norm	Knowledge Assets	Reciprocity	Behavioral Control	Presentisms	Reputation	Servant Leadership	Trust	Self-efficacy	Altruism	Affiliation	Empowering Leadership	Empathy	Reward	User satisfaction	Abusive supervision	Management Support	Network Centrality
Chennamaneni et al. (2012)			X	X			X														
Alali and Salim. (2013)																		X			
Radaelli et al. (2014)	X																				
Hyun Sook Lee and Hong. (2014)						X	X				X										
Park and Lee. (2014)											X										
Wu et al. (2013)						X					X										
Chai et al. (2014)						X					X										
Xi Zhang et al. (2014)						X			X			X									
Faizuniah Pangil. (2014)											X										
Hassandoust et al. (2011)				X							X										
Hejase et al. (2014)											X									X	
Khosravi and Ahmad. (2014)	X																				
Ologbo and Knight. (2015)											X	X								X	
Jinyang. (2015)		X				X					X		X								
Shaari et al. (2015)								X					X								
Kim et al. (2015)																			X		
House et al. (2015)											X										
Mafabi et al. (2017)			X	X			X														
Mura et al. (2016)					X																
McGrane. (2016)																	X				
Jung-Chieh Lee et al. (2016)																				X	
Ali and						X					X									X	

Dominic.															
(2016)															
Tuan. (2016)						\mathbf{X}									
Rutten et al. (2016)							X								
Roba et al. (2016)							X						X		
Lo (2015)													X		X
Yan et al. (2016)					X										
Xing ZhangLiuChe n et al. (2017)			X		X		X	X	X			X			
Goh and Sandhu. (2017)			X							X					
Wei-Li Wu & LEE. (2017)											X			·	
Xing ZhangLiuDen g et al. (2017)			X		X			X	X			X	·		

Appendix A: Previous Literature related to Knowledge Sharing									
NO	Author	Title	Factors	Theories Applied	Participants	Significate Findings			
1	Radaelli et al. (2014)	Knowledge Sharing and Innovative Work Behaviour in Healthcare: A Micro-Level Investigation of Direct and Indirect Effects	Motivation to share Ability to share Opportunity	Social Exchange Theory (SET)	A total of 150 Physician Nurses Psychologists, Physiotherapists Others. And other professionals	Two pre-conditions for individual knowledge sharing including, employees' ability and opportunity which also directly affect innovative behaviors.			
2	Chennamaneni et al. (2012)	A unified model of knowledge sharing behaviors: theoretical development and empirical test	Psychological Antecedents. Organisational antecedents. Technological antecedents.	Decomposed Theory of Planned Behaviour (DTPB)	Doctoral students and experienced knowledge workers.	A field survey of knowledge workers it supports most of the hypothesized relationships and explains 41.3% of the variance in the actual KS behaviors and 60.8% of the variance in the intention to share knowledge.			
3	Alali and Salim. (2013)	Virtual Communities of Practice Success Model to Support Knowledge Sharing Behaviour in Healthcare Sector.	Users satisfaction	Theory of Reasoned Action (TRA)	Healthcare professionals	Proposed model can be used to evaluate and measure the knowledge sharing behavior of VCoPs, bridging the knowledge gap between research and practice in the healthcare sector.			
4	Park and Lee. (2014)	Knowledge sharing in information systems development projects: Explicating the role of dependence and trust.	Dependence. Trust.	Theory of Relationship Maintenance & Social Exchange Theory.	135 project teams within two large IT firms.	Dependence and trust have a strong persistent impact on knowledge sharing.			
5	Xi Zhang et al. (2014)	Culture effects on the knowledge sharing in multi- national virtual classes	Reciprocity. Reputation. 3.Economic Reward. Enjoy helping Self-efficacy.	Social Exchange Theory.	This study involved six semi-structured interviews used to explore the culture effects of knowledge sharing. Along with a survey to examine the interaction effects of culture and different knowledge sharing motivations.	Some cultural values such as (collectivism) directly affect knowledge sharing, while most cultural values such as (power distance, uncertainty avoidance, and Confucian dynamism) all have interactive effects on knowledge sharing motivations, also identified some cultural values such as, concern for face, which have complex impacts on knowledge sharing.			
6	Faizuniah Pangil. (2014)	The mediating effect of knowledge sharing on the relationship between trust and virtual team effectiveness.	Trust.	Social Exchange Theory.	Individuals working in a virtual environment.	Hierarchical regression analysis indicated that knowledge sharing and all three types of trust are significantly related to virtual team effectiveness. However, only personality-based trust and institutional-based trust are significantly related to knowledge sharing, with knowledge sharing only partially mediating the			

						relationship between these two types of trust and team effectiveness.
7	Khosravi & Ahmad. (2014)	Examining Antecedents of Knowledge- Sharing Factors on Research Supervision: An Empirical Study	Ability. Culture. Social network. Supervisor support. Learning strategy.	Experiential Learning Theory.	150 students	The generational factors addressed in this study included university culture, social networks, and supervisor support all of which have a positive impact on knowledge sharing in research supervision.
8	Hejase et al. (2014)	Knowledge Sharing: Assessment of Factors Affecting Employee ' Motivation and Behavior in the Lebanese Organizations Knowledge Sharing: Assessment of Factors Affecting Employee ' Motivation and Behavior in the Lebanese Organizations	Managerial support of knowledge sharing. Culture. Psychological ownership of knowledge. Technology. Communication. Rewards. Trust. Organization's size. Age, gender.	knowledge-Based Theory.	148 Lebanese Employees.	The relationship has existed between knowledge sharing and trust, management's support, culture and the psychological ownership of knowledge, indicating the importance of such factors as prerequisites for success in knowledge sharing.
9	Ologbo and Knight. (2015)	Knowledge sharing in a multi-nationality workforce: Examining the factors that influence knowledge sharing among employees of diverse nationalities.	Trust. Management support. Mutual reciprocity. Self-efficacy. Altruism.	A Multi-Theory Perspective. Self-Efficacy Theory.	Employees working within a multinational organization.	Trust and management support are significant factors influencing knowledge sharing among multi-nationality employees.
10	Jinyan g. (2015)	Knowledge Sharing in Virtual Communities: A Social Exchange Theory Perspective	Willingness. Trust. Reciprocity. Altruism.	Social Exchange Theory	School students	Members' altruism cannot predict knowledge sharing behaviors. members' with sharing willingness being the most important factor for virtual community knowledge sharing behaviors, when compared with trust, reciprocity, and altruism.
11	Shaari et al. (2015)	Antecedents of Knowledge Sharing Behavior among Nurses: Towards Research Agenda	Presenteeism. Altruism. Virtual communities.	Social Cognitive Theory. Social Capital Theory. Theory of Planned Behaviour.	Among nurses	Presentisms was viewed as being a positive factor, which that has been substituted for absenteeism due to the altruistic behavior that will influence KSB.
12	Kim et al. (2015)	Knowledge Sharing, Abusive Supervision, and Support: A Social Exchange Perspective	Abusive supervision. Organization and co-worker.	Social Exchange Theory	Korean bilingual academics	Abusive supervision and organizational support could be effective tools for attenuating the negative effect of abusive supervision on knowledge sharing.
13	House et al. (2015)	How do institutional norms and trust influence knowledge sharing? An institutional theory	Institutional Norms. Trust.	Institutional theory	340 Technology firm employees.	Institutional norms are positively related to knowledge sharing, while trust serves as the dominant mediator in the relationship between institutional norms and knowledge sharing.
14	Mura et al. (2016)	Behavioral operations in healthcare: a knowledge sharing perspective	knowledge assets. psychological safety. knowledge sharing. Innovative work Behavior.	Social Exchange Theory	226 Healthcare professionals including psychologists, physiotherapists, nurses and other	Recognized a link between knowledge assets and knowledge sharing, is both direct and indirect with psychological safety being a relevant mediating construct.
15	McGrane.(2016)	Knowledge Sharing in Multicultural Organizations	Rewards. Social units. Cultural diversity.	Knowledge-Based Theory Agency Theory	Multicultural organizations managers.	Positive relationship between rewards and knowledge sharing.
16	Jung-Chieh Lee et al. (2016)	Examining the impacts of organizational culture and top management support of knowledge	Clan culture Hierarchy culture Top management support	Innovative Model	SPI- certified Taiwanese organizations.	Clan culture is positively related to SPI knowledge sharing, while hierarchy culture is negatively related to SPI knowledge sharing. It also indicated that top management support has a positive influence on both SPI knowledge sharing and software process improvement (SPI).

		sharing on the				
		success of software process improvement.				
17	Ali & Dominic. (2016)	Organizational and individual factors impact on knowledge sharing practice: The association with cost reduction.	Management Support. Organization structure. Organization Culture. Intention. Trust. Reciprocity.	Theory of Planned Behaviour (TPB)	157 Employees	knowledge sharing practice is positively influenced by management support and organizational culture which promotes knowledge sharing while the less centralized organizational structure is needed.
18	Trong (2016)	Knowledge Sharing in Public Organizations: The Roles of Servant Leadership and Organizational Citizenship Behaviour	Servant Leadership. Organizational Citizenship Behaviour. Entrepreneurial orientation.	Social Exchange Theory & Social Learning Theory	197 department managers in public organizations.	Data analysis provided evidence for OCB's mediating role in creating a positive association between servant leadership and knowledge sharing.
19	Rutten et al. (2016)	The impact of (low) trust on knowledge sharing	Trust	Century Theory.	102 professionals working for a financial organization.	The identified differences in the level of knowledge sharing in high versus low trust situations are significant. With the effect being larger for affect-based trust and implicit knowledge.
20	Roba et al. (2016)	Individual, Organizational and Technological Factors Affect Knowledge Sharing Practices in Assosa Hospital, Ethiopia	Trust. Reward.	Knowledge Sharing Theory	Health professionals	There is a significant association between a rewards system and knowledge sharing practices. It indicates that trust among staff, open communication among staff, awareness, motivational scheme, supportive leadership, knowledge sharing strategy, resource, and reward are the most influential factors that affect knowledge sharing practices in hospitals.
21	Yan et al. (2016)	Knowledge Sharing in Online Health Communities: A Social Exchange Theory Perspective	Perceived Social support the sense of self _worth. Face concern. Reputation enhancement. Cognitive costs. Exceptional costs.	Social Exchange Theory.	323 users of two well-known OHCs (Online Health Communities)	Three factors positively impact the sharing of both general and specific knowledge: including a sense of selfworth, the members' perceived social support, and reputation enhancement.
22	Xing ZhangLiuChen et al. (2017)	Social capital, motivations, and knowledge sharing intention in health Q&A communities	Social Interaction. Social Trust. Shared Goal. Altruism. Knowledge Self- efficacy Empathy. Reciprocity. Reputation.	Social Capital Theory	288 study respondents including doctors, nurses, patients, and families.	Social capital positively affects intrinsic and extrinsic motivations, which positively influence the intention of health professionals and normal users to share knowledge. While additionally, the motivations of members fully mediate the effects of social capital on knowledge sharing intentions. Specifically, intrinsic motivation influences knowledge sharing intentions more for health professionals than for normal users, whereas extrinsic motivation influences knowledge sharing intentions more for normal users than for health professionals.
23	Goh and Sandhu. (2017)	Affiliation, Reciprocal Relationships and Peer Pressure in Knowledge Sharing in Public Universities in Malaysia	Affiliation. Reciprocal relationships. Peer pressure.	Social Exchange Theory	235 employees	Employees with a strong sense an of affiliation and reciprocal relationships are more willing to conform to social pressure in terms of sharing their knowledge. This approach will result in a higher propensity for knowledge sharing among colleagues and peers.
24	Wei-Li Wu and LEE. (2017)	Empowering group leaders encourage knowledge sharing: integrating the social exchange theory and positive organizational behavior perspective.	Empowering leadership. A group member's level of psychological capital	Social Exchange Theory	Employees	Based on SET (Blau, 1964), empowering leadership has a positive effect on the knowledge sharing.
25	Xing ZhangLiuDeng et	Knowledge sharing	Reputation. Reciprocity.	Motivation theory	443 members of three famous online	Reciprocity and altruism positively affect the knowledge sharing intentions of both

	al. (2017)	motivations in online health communities: A comparative study of health professionals and normal users	Knowledge self- efficacy. Altruism. Empathy.		health communities.	health professionals and normal users, with reputation and knowledge self-efficacy having a greater influence on the knowledge sharing intentions of health professionals than on normal users.
26	Hyun Sook Lee and Hong. (2014)	Factors Affecting Hospital Employees' Knowledge Sharing Intention and Behavior, and Innovation Behavior.	Individual factors Incentives. Reciprocity. Subject norms. Behavioral control. Organizational: Organizational structure. CEO support. Learning climate. IT systems. Rewards systems. Trust.	Entrepreneurship Theory	Employees of three university hospitals	The factors that affect hospital employees' knowledge sharing intentions, knowledge sharing behaviors, and innovation behaviors being reciprocity, behavioral control, and trust.
27	Wu et al. (2013)	Information sharing and collaborative behaviors in enabling supply chain performance: A social exchange perspective	Trust. Commitment. Reciprocity. Power.	Social Exchange Theory	Top managers of a stock exchange corporation.	Reciprocity and trust have significant effects on information sharing.
28	Chai et al. (2014)	Factors Affecting Bloggers' Knowledge Sharing: An Investigation Across Gender SANGMI	Trust. Strength of social ties. Reciprocity.	Social Capital Theory Social Role Theory	Volunteers of two large universities.	Trust, the strength of social ties, and reciprocity all have a positive effect on knowledge-sharing behaviors.
29	Mafabi et al. (2017)	The Mediation Role of Intention in Knowledge Sharing Behaviour.	Attitude. Subjective norm. perceived behavioral control.	Theory of Planned Behavior.	120 Nurses and 71 Doctors.	Positive and significant relationships between attitudes, subjective norm, perceived behavioral control and behavioral intentions. There is a full mediation effect of behavioral intention between attitude, subjective norm, perceived behavioral control and knowledge sharing behavior? This implies that behavioral intention wholly processes planned behavior prediction.
30	Lo (2015)	Mechanisms to Motivate Knowledge Sharing: Integrating the Reward Systems and Social Network Perspectives	Reward systems. Network density. Valued network density. Network centrality. Valued network centrality.	Social Exchange Theory Social Capital Theory	Nurses were this study's the target sample because they must interact frequently with colleagues to exchange professional healthcare knowledge.	Reward system may positively influence an individual's knowledge sharing. Network and valued network centralities may be positively related to an individual's knowledge sharing. When an individual receives favors from others, even if he or she does not have the ability to share the requested knowledge immediately, he or she will feel obligated to do so in the future.
31	Hassandoust et al. (2011)	Behavioral factors influencing virtual knowledge sharing: the theory of reasoned action	Trust. Subjective norms.	Theory of Reasoned Action	One university was sampled.	Trust, anticipated reciprocal relationship and the willingness to share knowledge as being factors of an individual's attitude; while identification and organizational culture act as subjective norms, all having an indirect impact on an individual's intention to share knowledge virtually. No positive relationship was discovered between the degree of competition and an individual's attitude toward sharing knowledge; Nor was there a positive relationship between collectivism and subjective norms.