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Knowledge Sharing in Higher Education Institutions: A Systematic Review

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Abstract

Purpose – The purpose of this paper is to help in providing a better understanding on knowledge sharing amongst academics in Higher Education Institutions (HEIs). The aim in this study is realized by profiling existing literature to understand the determinants of knowledge sharing, research trends, theories and future research opportunities.

Design/methodology/approach – After carefully examining the extant literature, and by utilising relevant academic-based research databases, a total of 73 papers published in peer-reviewed journals over the last decade were reviewed and analysed using well established systematic literature review methodology.

Findings – The adopted systematic review revealed that there is limited contributions in understanding knowledge sharing in HEIs when compared with other sectors. The review provides a number of avenues for future research including technological, cultural, organisational and behavioural aspects at different levels.

Practical implications – This study helps in offering a focal point to senior management in HEIs for realising the requirements for developing appropriate strategies and programmes to promote knowledge sharing among academics and consequently enhance their institutions' performance.

Originality/value – This study utilised Jesson et al. (2011) in presenting a comprehensive systematic review of knowledge sharing specifically in the context of HEIs. This paper offers some theoretical and practical insights on what contributes towards understating the determinates affecting knowledge sharing practices among academics.

Keywords: *knowledge sharing, knowledge management, higher learning institutions, academics,*

Article type: *Literature review*

1 Introduction

Knowledge is widely considered to be an essential commodity to organizations, resulting in competitive advantage (Kukko, 2013; Nonaka & Takeuchi, 1995; Bello & Oyekunle, 2014). Knowledge management (KM) provides a means to align organizational goals with knowledge, leading to growth and further competitive advantages (Amayah, 2013; Howell & Annansingh, 2013; Nonaka & Takeuchi, 1995). KM has been widely typically discussed in relation to for-profit organizations, but it is important to consider that knowledge plays a vital role to HEIs, and thus they could benefit from established KM procedures (Prahalad & Hamel, 1990). Universities are in the business of generating and disseminating knowledge (Basu & Sengupta, 2007; Cheng et al., 2009; Daud & Hamid, 2006; Kim & Ju, 2008; Gomezelj Omerzel, Biloslavo, Trnavcevic, 2011; Rowley, 2000; Sohail & Daud, 2009). With this in mind, it has become evident to such institutions that KM is a valuable tool to meet organizational goals (Loh et al., 2010). A primary KM process that impacts the success of knowledge management programmes is knowledge sharing (Amayah, 2013; Cabrera & Cabrera, 2005; Fullwood, Rowley, & Delbridge, 2013). However, some research suggests that knowledge sharing continues to be an area that is under-researched compared to the other KM processes (Jain *et al.*, 2007; Amayah, 2013; Cabrera & Cabrera, 2005; Fullwood, Rowley, & Delbridge, 2013). Knowledge-sharing culture, trust, and motivations are considered vital enablers for knowledge sharing within an organization, (Ipe, 2003). Therefore, creating the appropriate environment and culture to share knowledge freely among workers is vital to the success of organizations (Suhaimee, Bakar, Zaki, & Alias, 2006). This also is true for HEIs. Whilst one might assume that due to the nature of HEIs, knowledge sharing would be intrinsic to the institutional culture, some research suggests that this is not necessarily so, and that knowledge sharing may be complicated due to several factors

(Alotaibi & Crowder 2014; Cheng, 2009).

While there has been a large number of studies focused on inhibitors to knowledge sharing among employees, have addressed knowledge-sharing some of its determinants (Cabrera & Cabrera, 2002; Gurteen, 1999; McAdam et al., 2012; Magnier-Watanabe & Senoo, 2010; Michailova & Hutchings, 2006; Muller, 2005; Reid, 2003; Suhaimee et al., 2006), little has been focused on understanding this within the HEIs context. In this respect, faculty members in HEIs play a key role in producing and reusing their knowledge and intellectual property through research and teaching (Kim & Ju, 2008). Consequently, sharing knowledge, expertise and resources among academics has long been vital to the success of universities (Ramayah, et al., 2013). Despite this, there is limited research on knowledge sharing in the context of knowledge-intensive organizations such as HEIs, especially those that consider relevant cultural factors in developing nations (Fullwood et al., 2013; Goh & Sandhu, 2013; Howell & Annansingh, 2013; Kim & Ju, 2008; Wang & Noe, 2010). This is a central concern, as cultural factors can have a tremendous impact on institutional culture and on how factors such as knowledge sharing are perceived (Arntzen & Worasinchai, 2012; Kukko, 2013; Riege, 2005; Santos, Soares, & Carvalho, 2013; Sharma et al., 2012).

With the above in mind, the aim of this paper is to examine cultural and other associated institutional factors through reviewing existing research on knowledge-sharing culture determinants among academics within HEIs. Given the paucity of research on this issue, identifying opportunities for additional research on this subject is a key goal of this article. In so doing, through using a profiling approach, the paper will attempt to highlight the most frequently researched determinants of knowledge-sharing culture in the business and higher learning institution sectors. Consequently, the paper is organized as follows; section two

provides an overview on the principles and fundamentals of knowledge sharing. This is followed by section 3, which focuses on exploring extant literature on the determinants associated with knowledge sharing. Section 4 describes the methodology utilised in this study and in particular the selection process for the identified articles in this domain. Section 5 subsequently critically discusses knowledge sharing in the context of Higher Education Institutions; providing a summary of key studies in this domain area. Section 6 presents key findings obtained in this systematic literature review by collectively discussing key factors contributing towards better understanding of knowledge sharing in HEIs. Finally, section 7 concludes the study and presents key implications and future research areas.

2 Knowledge Sharing: An Overview

Knowledge has become increasingly critical for organizations in terms of gaining a competitive advantage as they strive to compete in the knowledge-based era (Iqbal & Mahmood, 2012; Nonaka, 1994; Wei-Li, Chien-Hsin, Bi-Fen, & Ryh-Song, 2009; Nielsen & Cappelen, 2014)). To gain this edge, organizations elect to utilize available tools and strategies to systematically manage, store and disseminate organizational knowledge (Begoña Lloria, 2008; Wang & Noe, 2010). As a result, interest in knowledge management (KM) has become a strategic agenda item for public and private sector leaders and managers (Ragab & Arisha, 2013). Nielsen and Cappelin (2014) note that "*knowledge creation is vital to organisations of all kinds*" (p. 376). In order to gain the desired benefit from KM programmes, senior management must consistently aim to encourage knowledge-sharing behaviour and institute the appropriate culture needed for such activity (Cabrera & Cabrera, 2002; McAdam et al., 2012; Riege, 2005).

Despite several attempts to define knowledge sharing in the literature, it continues to be a

much debated topic among academics and practitioners depending on the context and perspective it is used in (Cabrera & Cabrera, 2002; Wang & Noe, 2010; Nielsen & Cappelen, 2014)). Knowledge sharing in the context of work is described as the exchange or dissemination of explicit or tacit data, ideas, experiences or technology between individuals or groups of employees (Cabrera & Cabrera, 2002; Wang & Noe, 2010). Yi (2009) described knowledge sharing at work as a set of behaviours that involves the sharing of one employee's work-related knowledge with another employee with the aim of achieving organizational goals. Amayah (2013) added that knowledge sharing focuses on the know-how type of knowledge to help others and solve problems within the organization. Other terms such as "knowledge exchange" and "knowledge transfer" are used interchangeably. Wang and Noe (2010) clarified that knowledge exchange involves two parties, the knowledge contributor and the knowledge searcher, while knowledge transfer refers only to the movement of knowledge across an organization and not between individuals (Szulanski, Cappetta, & Jensen, 2004, as cited in Wang & Noe, 2010).

3 Determinants of Knowledge Sharing

Establishing an actively cultivated knowledge-sharing environment is essential to effective knowledge management across an organization (Jolaee et al., 2014; Smith & McKeen, 2003; Taylor, 2013; Zhenyuan et al., 2016). Wei-Li *et al.* (2009) comment that knowledge management "*is one of the most important managerial concerns in organizations as it creates a competitive advantage in the knowledge economy*" (p. 84). Furthermore, Smith and McKeen (2003) described knowledge management as one in which ideas are freely challenged, and knowledge learned and applied, and where willingness to share knowledge and teach others is the norm.

Many previous studies examined knowledge sharing from technological, organizational, and individuals' behaviours perspectives. While much of the discussions haves been closely tied on individuals' behaviours (Yi, 2009), the technological part has been focused on systems and tools to facilitate sharing. In addition, much of the discussions in these domains maintained some cultural perspectives (i.e. national, organizational, individual, team climate), motivations, incentives, trust and individual identity. Therefore, individual, organizational, and associated behavioural elements need to be considered as much as relevant to the goals of knowledge sharing compared to the technological one.

3.1 Technological Determinants

Technology plays a major role in facilitating knowledge sharing (Riege, 2005). Terms such as "information technology" (IT), "information systems" (IS) and "knowledge management systems" (KMS) are widely used in the literature when referring to knowledge sharing. These terms frequently appear in the literature because they are considered key enablers of KM (Alavi & Leidner, 1999; Berlanga et al., 2008; Bock, Zmud et al., 2005; Davenport & Prusak, 1998; Riege, 2005; Seba, Rowley, & Delbridge, 2012; Smith & McKeen, 2003). However, a match between the technology and an employee's need to promote all types of communication methods was underlined in the published work (O'Dell & Grayson, 1998; Riege, 2005; Tsai, Chang et al., 2013). The promotion of knowledge sharing through IT was evident in several empirical studies (Ahmad & Daghfous, 2010; Kanaan & Gharibeh, 2013; Kim & Lee, 2006; Sharma, Singh et al., 2012; Siddique, 2012)

Other studies examined the relationship between IT, trust, and culture in promoting organizational knowledge sharing (Choi & Lee, 2003; Golden & Raghuram, 2010; Siddique, 2012). These authors commonly concluded that IT support and infrastructure were secondary to trust and a good knowledge-sharing culture in knowledge management. In other words, IT

or KMS cannot alone achieve effective knowledge sharing in the absence of factors such as trust, culture, organizational climate and leadership support. In fact, some studies found that systems and technology tools had a detrimental impact on knowledge sharing (Riege, 2005; Smith & McKeen, 2003). Some factors contributing to this barrier included unrealistic expectations of technology, a lack of training on the system, and a poor usability and design of the system. Organizational management plays an important role in selecting the correct technology to fit the existing organizational culture (Berlanga et al., 2008; Seba et al., 2012; Tsai et al., 2013).

3.2 Organizational Determinants

Factors related to people and organizations have dominated knowledge-sharing research, some more so than others have. The role of larger culture in shaping attitudes toward knowledge management and organizational culture are a prominent component of the research. In the next section, widely cited people and organization factors are highlighted.

Organizational culture has been the focus of several studies (Al-Alawi et al., 2007; De Long & Fahey, 2000; Li, Yezhuang et al., 2006; Magnier-Watanabe & Senoo, 2010; Nguyen & Mohamed, 2011; Sanz-Valle et al., 2011; Tong et al., 2013). Authors established several dimensions that affect knowledge-sharing behaviour including trust, national culture, leadership, organization structure and organizational learning. Subcultures, organizational climate, team culture and professional group culture were examined in relation to knowledge sharing (Ardichvili et al, 2006; Chen, et al., 2010; Jackson et al., 2010; King, 2008; McAdam et al., 2012; Magnier-Watanabe & Senoo, 2010). A significant number of these studies were conducted in the Chinese culture, and found that different levels of culture have a direct influence on knowledge-sharing behaviour. For example, McAdam et al. (2012) examined the role of culture in knowledge-sharing processes at different organizational levels in

Chinese organizations by developing an integrated cultural framework. They showed that Chinese culture at the corporate, group and individual level influences knowledge-sharing processes.

Similarly, Ardichvili et al. (2006) examined the impact of national culture factors on knowledge-sharing strategies in online communities of practice in three different countries (Brazil, China and Russia). They outlined that KM programmes are influenced by the values and cultural preferences of workers. Li et al. (2006) examined organizational culture and factors that impact on online knowledge sharing between American and Chinese participants in Fortune 100 companies. The authors established that sharing knowledge is influenced by national culture differences across organizations and communities of practice (COP).

3.3 Behavioural and Motivational Determinants

In order to encourage knowledge-sharing behaviour, many enablers and success factors in this behaviour are discussed throughout the literature. For example, the interrelation between trust and a knowledge-sharing culture has been the subject of many studies (Alam et al., 2009; Aulawi, Sudirman, Suryadi et al., 2009; Casimir et al., 2012; Wang & Noe, 2010; Wickramasinghe & Widyaratne, 2012). Across research, rewards (extrinsic and intrinsic), innovation, leadership, incentives, technology, commitment, demographic profiles and job satisfaction were all found to influence KS in the business sector (Alam et al., 2009; Arzi et al., 2013; Aulawi et al., 2009; Bock et al., 2005; Kanaan & Gharibeh, 2013; Kathiravelu et al., 2013; Tong et al., 2013; Von Krogh et al., 2012; Wang & Wang, 2012; Wickramasinghe & Widyaratne, 2012).

On the other hand, barriers to KS were also identified and examined through various studies (Arntzen & Worasinchai, 2012; Kukko, 2013; Riege, 2005; Santos et al., 2013; Sharma et al., 2012). Findings identified several barriers: a lack of time for sharing knowledge, trust culture,

communication mediums, knowledge-sharing culture, training on IT tools, leadership support and commitment, job security, different national culture and unwillingness to use technology. Many KS enabler and barrier papers were qualitative in nature, utilized survey-based questionnaires and were located in Western and Asian countries.

3.4 Cultural Determinants

Culture can be considered in terms of institutional or organisational culture, national culture, and of course, knowledge sharing culture itself. Taylor (2013) defined knowledge sharing culture as "*a culture that has achieved distinguishable levels of competency at managing, sharing, and employing information and knowledge that positively influences the organization's ability to achieve its goals and objectives*." This definition is perhaps the most effectively highlights all aspects of KM practices and emphasizes the skills and understanding needed to establish such a culture and achieve the optimum desired outcome. However, in the published research on the topic of knowledge sharing among academics, it is clear both that national culture appears to play some role and that the role it plays is not clear. For this reason, the term "culture" will be used throughout the body of the paper to designate national and regional culture, unless otherwise specified. Most of the research reviewed in the commercial and public sector was conducted in Western countries, Malaysia and China. However, a few studies were conducted in the Middle East, Africa and South America (Al-Alawi et al., 2007; Alam et al., 2009; Heydari, Armesh, Behjatie, & Manafi, 2011; Kanaan & Gharibeh, 2013; Seba et al., 2012; Siddique, 2012). Therefore, due to the concentration of research in this pattern, it is difficult to ascertain the relationship between larger culture and behavioural factors, though the existing work does point to some relationship. Furthermore, the public sector was the topic of a number of studies; comparative papers between the public and private sector's knowledge-sharing practices and national culture were noticeable as well.

4 Methodology for Systematic Literature Review

The development of systematic reviews and its associate , meta-analysis has been advancing over the last two decades (Tranfield et al., 2003). While systematic reviews highlights important contributions to a particular domain, meta- analysis on the other hand suggest a statistical procedure for synthesizing findings (Jesson et al., 2011). The literature presented further type of reviews such as narrative reviews. Whereas narrative reviews used by authors when small number of empirical studies exist in a domain and to extend understanding of theories and practices underpinning a phenomenon (Wang & Noe, 2010). However, some authors argue that narrative reviews may lack methodical approach (Jesson et al., 2011). A systemic literature review must be approached methodically to identify relevant published work and to be thorough (Ali & Miller, 2017; Williams et al., 2015). In addressing the question of determinants impacting knowledge sharing in HEIs, particularly cultural factors in developing nations, it is important to consider that limited research exists. Therefore, a method that permitted both depth and breadth in searching and arranging evidence **is** ~~was more~~ appropriate than it would be in an overly saturated research area (Ali & Miller, 2017). The literature provided number of systematic review frameworks including **Tranfield et al., (2003) and Jesson et al., (2011). Both models offered step by step guide to conduct systematic reviews. However, Tranfield et al (2003) focussed on applying the systematic modle used in medical disciplines into social sciences.** In developing the methodology for this systematic literature review in such a way that it would meet the aims of the review, the authors applied the framework recommended by Jesson et al. (2011). **It provides simple and systematic step by step guide to conducting a literature review in management field and has been used by**

several authors in knowledge management and sharing studies (Ragab & Arisha, 2013; Drust & Edvardsson 2012). Jesson et al. (2011) arranges this framework in number of sequential steps starting by exercising a mapping activity in the relevant field domain (knowledge management and in particular sharing among academics in HEIs) by utilising a scoping review approach. Such approach starts with conducting comprehensive search while maintaining a robust quality assessment for the collected literature.

Nonetheless, due to the limited contributions within this domain, the research plan was also of importance, as to ensure that all relevant articles were included. A research plan was developed including deriving relevant research questions, publication inclusion and exclusion criteria, database identification, and search keywords reflecting study objectives. Figure 1 provides a detailed process of the adopted research design approach for this study.

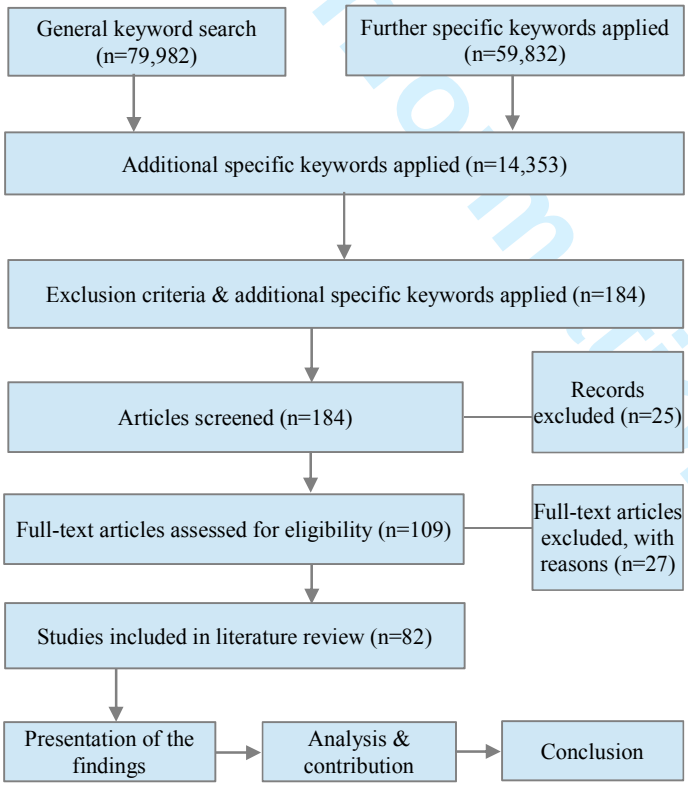


Figure 1 Research Design

In order to achieve the required in-depth understanding of knowledge sharing context, a review criteria has been set to include the appropriate selection criteria for publications within this subject domain. In this respect, firstly, the selection process for these articles covered publications between 2004 and 2017, English language only, peer-reviewed journals and conferences, focus on higher learning or education institutions (public or private), focus on knowledge-sharing determinants among academics, key knowledge-sharing concepts, processes and literature review papers. The exclusion criteria were; publications prior to 2004, non-English language publications, book reviews and chapters, and non-academic research and that not focusing on higher learning. Furthermore, for knowledge-sharing concepts and process papers, the exclusion criteria also included papers that focus on a specific context. The purpose of using the exclusion criteria for general knowledge-sharing concepts was to reduce the large number of articles to only papers aimed at discussing general knowledge-sharing terminologies and concepts. However, the reason for excluding book chapters and reviews was to ensure peer revision status and academic research relevance.

Second, the databases used included; Scopus, Education Resource Information Centre (ERIC) Academic Search Complete, Academic Search Premier, ProQuest, and JStor. These databases were chosen because of their extensive coverage of publications and their focus on education and higher learning. Additionally, and important to the goals of this study, these databases include international publishers (Emerald Group Publishing, Springer Science & Business Media, Wiley Periodicals, Inc., SAGE Publications, Inc., Elsevier science publication company) and comprehensive peer-reviewed journals on various disciplines, particularly

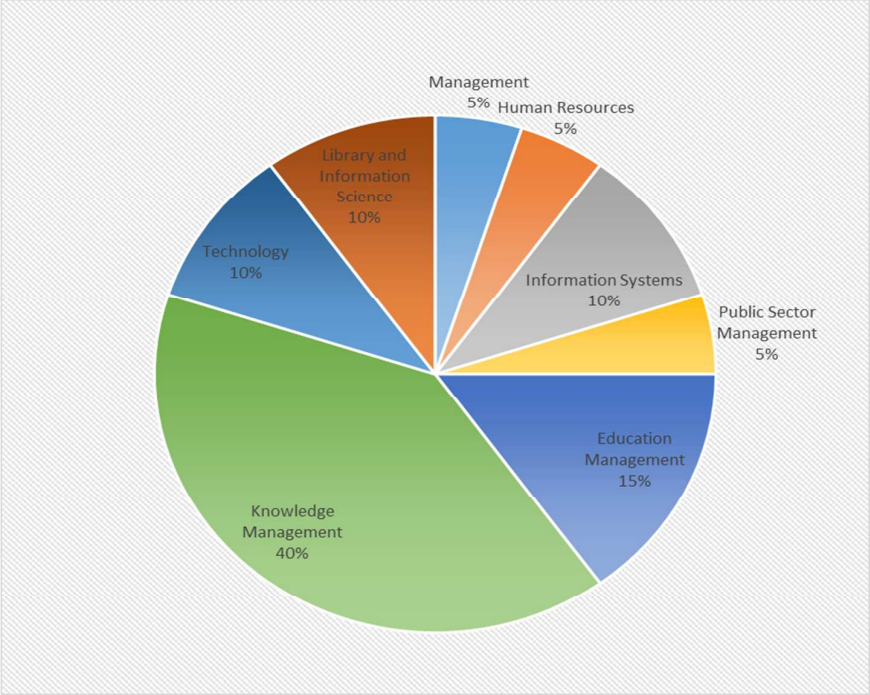
education. Two types of keywords were used: general and specific ones. The general keywords chosen were aimed at providing a comprehensive understanding of key knowledge-sharing concepts and definitions in general in organizational settings, while the aim of the specific keywords used was to gain current research status in specific academic and cultural contexts.

Third, the authors initially searched databases for general keywords including: "knowledge sharing", "knowledge transfer" and "knowledge sharing culture". The search returned 79,982 articles for all three key terms.

Fourth, as the focus of this paper has been aimed at higher learning and education institutions and among academics, the author repeated the search process attempting to limit the search result by adding "higher learning institutions", "higher education institutions" and "academics" to the above general search terms. This search returned 59,832 articles for all three combinations. Since this study is examining existing literature on knowledge-sharing culture determinants within the context of higher learning institutions, the author performed the next search step by adding "knowledge sharing culture" to the above three context-related terms (higher learning/education institutions and academics and their variances). This search returned 14353 articles. When these articles were analysed, it was observed that a large number focused on knowledge management and knowledge sharing as an element of KM was mentioned in the articles.

Fifth, the authors decided to use articles in which "knowledge sharing" and academics appeared in the title or abstract. This method was chosen to avoid selecting non-related papers, to extract the correct number of publications, and to restrict the search to a manageable number of articles focusing on knowledge-sharing determinants among academics. This search returned 184 papers from 2004–2017, and after analysing the 184

papers, the author identified 109 relevant publications. However, on further analysis, only 82 papers focused on generic knowledge-sharing concepts and knowledge sharing among academics in higher learning institutions. Large numbers of articles were published in the *Journal of Knowledge Management* and the *Journal of Knowledge Management and Practice*, according to Serenko and Bontis (2009); these journals were among the highest-ranked KM publications. Discipline areas in these journals included management, human resources management, education management and technology, and information systems as depicted in Figure 2.



5 Examining Knowledge Sharing in Higher Education Institutions (HEIs)

Given knowledge is HEIs input as well as and output, they have maintained a unique and distinctive sittings compared to other organizations (Gomezelj et al., 2011); studies point out

that higher education institutions are in the business of both generating and disseminating knowledge (Alhammad et al., 2009; Amayah, 2013; Cheng et al., 2009; Fullwood et al., 2013; Goh & Sandhu, 2013; Heydari et al., 2011; Howell & Annansingh, 2013; Jahani et al., 2011; Jolaee et al., 2014; Karahoca et al., 2011; Kim and Ju, 2008; Li et al., 2006; Nordin et al., 2012; Gomezelj et al., 2011; Ramachandran, 2013; Ramayah et al., 2014; Rowley, 2000; Sandhu, Jain, & Ahmad, 2011; Sharimllah et al., 2007; Siddique, 2011; Sohail & Daud, 2009; Nielsen & Cappelen, 2014). Additionally, the authors agree that a positive approach to knowledge management by HEIs would facilitate the transition to a knowledge-based economy, enhance knowledge sharing, improve educational programmes and consequently improve the overall performance of universities. A university is seen as a platform for academics to share ideas and insights (Martin & Marion, 2005; Tan, 2015; Nielsen & Cappelen, 2014). Effective knowledge sharing thus plays a critical role in knowledge-intensive organizations such as higher education institutions (HEIs), where maximizing the intellectual capital allows them to compete in the global market (Fullwood et al., 2013; Goh & Sandhu, 2013; Karahoca et al., 2011; Kim & Ju, 2008; Siddique et al., 2011; Sohail & Daud, 2009; Swart & Kinnie, 2003;).

Academic freedom and autonomy have been particularly strong traditions in the academic sector, to the extent that this independence is a distinguished feature of the sector (Cronin, 2000). Other features that make universities differ from most other organisations include overall structure, the types of leadership, and the overall organizational culture (Fullwood et al., 2014). Clark (1987) argues that the professional culture of faculty and academic staff impact knowledge dissemination in HEIs. Faculty and teaching staff arguably are part of a mixture of the culture that they reside in at the

organizational level (Kim & Ju, 2008). According to Wang and Noe (2010), management support of KS activities and leadership would promote sharing environment among employees through leading by example. However, leadership in HEIs are shown to be unique and different than other sectors (Altabch, 2015). Yielder and Codling (2004) identified two distinctive leadership types that only exist in universities: academic and managerial leadership. The empirical findings of Fullwood et al., (2013) suggested that HEIs leadership support is critical in influencing the level of knowledge-sharing among academics at HEIs.

Nielsen & Cappelen (2014) categorise knowledge as explicit and tacit. Explicit information is that which can be described by an individual, whereas tacit knowledge is that which is understood by the individual but cannot always be clearly expressed; in elaborating, the authors cite the example to read faces as an example of tacit knowledge (Nielsen & Cappelen, 2014). The transfer of knowledge in an organisational setting is, for these authors, about transferring tacit knowledge, gained through experience, from person to person. Furthermore, Nielsen & Cappelen (2014) cite Inkpen and Tsang (2005), who have defined the transfer of knowledge on the individual level as "*how knowledge acquired in one situation applies or fails to apply to another situation*"(p. 378). Furthermore, it is important to understand knowledge sharing in terms of its human component; though some degree of technological intervention can aid knowledge sharing, the amount that can be achieved through technology is limited (Wei-Li et al., 2009; Nielsen & Cappelen, 2014)

Given the large amount of research focused on studying knowledge sharing among employees in the commercial and public sectors, and the fact that knowledge is so critical to HEIs, one could expect HEIs to have exploited KM and KS strategies applied in other sectors. However, the literature reveals that there have been few attempts by HEIs to

implement comprehensive KM and KS programmes (Selamat, *et al.,* 2008; Cheng et al, 2009; Fullwood et al., 2013; Goh & Sandhu, 2013; Kim & Ju, 2008; Ramachandran, 2013; Rowley, 2000).

5.1 Knowledge Sharing Among Academics

Despite the mission of HEIs to generate and disseminate knowledge, some researchers have noted that knowledge hoarding is common practice among academics (Cheng et al., 2009). As with knowledge-sharing research in HEIs, limited research regarding knowledge sharing among faculty members within HEIs was observed (Fullwood et al., 2013; Kim & Ju, 2008; Nordin et al., 2012; Sohail & Daud, 2009).

Unwillingness to share knowledge by faculties can be attributed to a lack of systems and policies to protect their intellectual assets (Kim & Ju, 2008), the individualistic nature of academics and research (Kim & Ju, 2008; Tippins, 2003, as cited in Fullwood et al., 2013), the complexity of academic departments (Lee, 2007, p. 42, as cited in Fullwood et al., 2013) and loyalty to the discipline rather than the organization (Cronin, 2000, as cited in Fullwood et al., 2013). The competitive nature of academia and the need for ongoing publication in order to be considered employable are factors inhibiting the sharing of knowledge among academics within HEIs.

However, sharing knowledge and expertise among faculty members is increasingly becoming essential and demanded by university officials (Kim & Ju, 2008). In an effort to encourage academics to share knowledge, HEIs have attempted to employ several tools such as knowledge management systems and special interest group research (Zawawi et. al. 2011;, Rahman, et. al, 2011). The aim of this was to address the problem of limited knowledge sharing and to create a collaborative sharing environment among faculty members with a common research interest.

5.2 Summarising Contributions of Knowledge Sharing Among Academics in HEIs

Due to the limited number of identified studies specifically on knowledge sharing among academics in HEIs, they are explored here in detail with the aim of identifying research trends and future opportunities and factors affecting knowledge-sharing culture, particularly as they involve factor related to larger culture. Table 3.1 will summarize the knowledge-sharing determinants explored in these identified studies.

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
1	Norulkamar and Hatamleh, 2014	Malaysia	Narrative Review	N/A	• Individual: trust, subjective norms, personal attitudes, knowledge is power • Organizational: culture, support, incentives, team support	• Trust, subjective norms and personal attitude top barriers among academics in Malaysian universities • Management support, organizational culture and incentive systems were among the organizational barriers identified in the review

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
2	Alotaibi and Crowder, 2014	Saudi Arabia	Survey-based questionnaire and interviews	Conceptual framework	• Motivations (intrinsic/extrinsic) • Organizational culture • IT acceptance • Subjective norms	• A conceptual model for intentions of academics to share knowledge by using web technologies was developed • Factors from existing literature and the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) were used

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
3	Ramayah et al., 2014	Malaysia	Survey-based questionnaire and interviews	440	• Writing contributions • Organizational communications • Personal interactions • Community of practice	• Authors applied and validated the Knowledge Sharing Behaviour Scale (KSBC) instrument to measure knowledge-sharing behaviour among academics • University administrators can utilize this scale to identify the status of knowledge sharing among academics and create strategies and programmes to institute a culture of knowledge sharing among academic staff

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
4	Jolaee et al., 2014	Malaysia	Survey-based questionnaire	117	• Attitudes • Subjective norms • Trust	• Attitudes are positively related to knowledge-sharing intention • Self-efficacy and subjective norms were not found to affect knowledge-sharing intentions and trust was not found to impact on intention to share knowledge
5	Fullwood et al., 2013	UK	Survey-based questionnaire	230	• Intention to share • Types of knowledge shared • Organization climate • Rewards	• Knowledge-sharing culture is individual in nature and self-serving in universities • Leadership, organization culture and information technology have low impact on KS behaviour

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
6	Goh and Sandhu, 2013	Malaysia	Survey-based questionnaire	554	• Active commitment • Active trust • Subjective norms • Perceived behavioural control	• Knowledge sharing is influenced by emotional constructs such as active commitment and active trust • Other Theory of Planned Behaviour (TPB) constructs found to have a positive influence on knowledge sharing among academics • There were significant differences between perceptions of academics in public universities compared to private ones

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
7	Howell and Annansingh, 2013	UK	Focus groups	2 focus groups	• Organizational culture • Subcultures • Path dependency	• Limited knowledge-sharing practices in the "Post 1992" university • Institutional subcultures play a key role in sharing knowledge
8	Nordin et al., 2012	Malaysia	Structured questionnaire survey	187	• Attitudes towards KS • Subjective norms • Compliance norms • Normative norms	• Only attitudes, compliance norm, normative norms and PBC have influenced knowledge sharing behaviour among academics
9	Al Husseini and Elbeltagi, 2012	Iraq	Self-administered questionnaire	230	• Relationship between knowledge sharing and process innovation in HEIs	• Knowledge-sharing intention among faculties is lower than knowledge collecting • Departmental culture impacts on knowledge-sharing behaviours

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
10	Babalhavaeji and Kermani, 2011	Iran	Survey-based questionnaire	90	• Attitudes • Intention to share knowledge • Intrinsic motivation • Length of experience	• Faculty with higher experience tend to share knowledge more than those with lower experience
11	Sohail and Daud, 2009	Malyaysia	Survey-based questionnaire	161	• Organizational culture • Type of knowledge shared • Attitudes • Motivations	• All examined constructs were found to be important for enhancing knowledge sharing among academics in both private and public university settings • Technology alone would not enhance or promote knowledge sharing among academics without addressing organizational issues, i.e. culture

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
11	Cheng et al., 2009	Malaysia	Survey-based questionnaire	60	• Organizational factors • Individual factors • Technological factors	• Forcing academics to share knowledge such as research outcomes is not as effective as a reward • Understanding individual factors (internal and external) that prevent knowledge sharing is essential for HEIs
12	Kim and Ju, 2008	Korea	Survey-based questionnaire	78	• Trust • Collaboration • Openness to share • Reward system	• Trust and reward system found to highly influence faculty members' decision to share knowledge
13	Suhaimee et al., 2006	Malaysia	Survey-based questionnaire	17	• Incentives • Promotions • Job assessments	• Knowledge-sharing culture is positively influenced by incentives, promotions and job assessments

Table 3.1 Summary of research into knowledge sharing among academics in higher learning institutions

No	Author(s) and Year	Country	Methodology	Sample	Determinants Researched	Relevant Findings
14	Dyson, 2004	Australia	Case study	25 semi-structured interviews	• Barriers to sharing knowledge among faculty members	• Lack of time and unwillingness to share were found to prevent KS among faculties Lack of common culture and language were found to negatively impact on KS

6 Discussions

Since knowledge sharing is a behavioural and voluntary activity related to knowledge donors and recipients (Davenport & Prusak, 1998), the majority of the reviewed studies investigated the behaviour, attitudes and intentions of academics towards knowledge sharing (Alotaibi & Crowder, 2014; Babalhavaeji & Kermani, 2011; Fullwood et al., 2013; Goh and Sandhu, 2013; Jolaee et al., 2014; Nordin et al., 2012; Ramayah et al., 2014). Therefore, individual factors were dominant among the researched determinants followed by organizational and technology factors influencing on knowledge-sharing activities among academics.

6.1 Individual factors

Since people perform knowledge sharing, behavioural issues logically play a major role in the decision of individuals to participate in knowledge-sharing activities. Individual factors considered in the above studies included: trust, personal attitude, motivation, affective commitment, subjective norms, personal expectation, and the relationship between knowledge and power.

It is unlikely that individuals will share their hard-earned knowledge and tacit experience without trusting the receiving party (Cheng et al., 2009; Norulkamar & Hatamleh, 2014), therefore lack of trust was highlighted as a key barrier to knowledge sharing among academics. (Amin et al., 2011; Goh & Sandhu, 2013, 2014). Academics believed that their knowledge is power and losing it would threaten their promotion opportunities (Cheng et al., 2009; Jain et al., 2007). The above factors were similarly identified in the existing literature by other studies in different contexts (Wang & Noe, 2010). Considering that distinct cultures have particular attitudes about power, knowledge, and sharing, which are likely to impact individual attitudes, this relationship is in need of further research.

6.2 Organizational factors

Outside the control of individuals, external factors play an important role in influencing employees to share knowledge with each other. Organizational factors from the reviewed literature included: organizational culture, climate, subcultures, reward systems and management support. These factors were supported by findings from other sector studies (Kanaan & Gharibeh, 2013; Von Krogh et al., 2012; Wang & Wang, 2012). Riege (2005) identified organizational factors as a key barrier to knowledge sharing among employees. This was supported later by Norulkamar and Hatamleh (2014) in a study among academics in Malaysian universities. In addition, incentive schemes and reward systems were preferred among academics for enhancing knowledge-sharing behaviour (Amin et al., 2011; Cheng et al., 2009).

6.3 Technological factors

Technology-related factors were addressed in few studies (Alotaibi & Crowder, 2014; Cheng et al., 2009). This was not in line with other sector studies, where IT-related factors were heavily investigated. Factors in the reviewed papers focused on the acceptance of IT as a tool for sharing knowledge (Alotaibi et al., 2014) and general technology-related factors influencing knowledge sharing (Cheng et al., 2009). Furthermore, hesitancy toward using IT tools due to information technology literacy issues was identified as a barrier to knowledge sharing among academics (Amin et al., 2011). It was observed that technology factors were under-represented compared to other sectors in the literature.

The reviewed literature does not consider the determinants affecting knowledge-sharing practices in HEIs in a comprehensive manner. Whilst these have been well researched to a certain degree in other sectors, the relationship between determinants and influences on knowledge sharing in HEIs needs further research. Significantly, cultural factors (i.e. national

culture, organizational climate, academic culture, religion, sub- and team cultures, language and gender) would impact academics' decision to participate in KM and knowledge-sharing activities (Al Husseini & Elbeltagi, 2012; Dyson, 2004; Fullwood et al., 2013; Nordin et al., 2012; Tilak, 2015). Other factors such as knowledge communication methods, trust, and internal and external influences of KS in HEIs need to be explored (Babalhavaeji & Kermani, 2011; Cheng et al., 2009).

6.4 Cultural Factors

Nistor et al., (2014) has pointed out that the cultures of specific academic communities are informed by their surrounding regional or national culture, and thus one must consider them as many singular entities, rather than homogenised. This will also influence how knowledge is regarded and transferred. Teichler (2004) notes that academic knowledge transfer is often considered within discussions of internationalism. However, in describing efforts to internationalise higher education, Wamboye, Adekola, and Sergi (2015) note that knowledge *"[does] not emerge from a singular cultural base, but rather [is] applied differently in different cultural settings*" (p. 386). Teffera and Altbach (2004) also comment that efforts to internationalise can be difficult due to diversity; they point out that it can be difficult to achieve a general academic culture even across one continent, using Africa as an example. The authors also note that knowledge sharing is, to some extent, informed by culture; however, it is largely developed nations who are the producers of knowledge, and those in developing nations who are the consumers of culture (Teffera & Altbach, 2004). Arguably, this is problematic, as in a context of free access to information, outside of a knowledge commodity culture, those in developing nations might select different knowledge as most salient, or understand knowledge differently, which will be influenced to some extent by culture. Furthermore, Teichler (2004) cites the commercially-motivated aspect of

internationalising efforts in developing nations as impacting knowledge transfer. Guzman and Trivelato (2011) also cite this commercial aspect as a concern impacting knowledge transfer among academics. An in-depth study of factors influencing knowledge sharing among faculty members in HEIs, particularly national culture, would help universities to adopt appropriate strategies to manage their intellectual assets, and enhance performance, research output and teaching activities.

7 Conclusion

For the past two decades, the value of knowledge management has been widely established in commercial and public sectors. Overall, Knowledge-sharing has contributed towards shaping the performance of organizations. HEIs are knowledge organisations with tacit and explicit knowledge inserted in people and processes (Fullwood et al., 2013).. In the context of HEIs, knowledge sharing among academics in higher learning institutions has been developing over the last decade. This paper attempts to provide the evidence base concerning knowledge sharing in HEI settings and offers a broader view of through systematic literature review providing researchers with a map of the current literature and insights into future research. This research presents a classification of KS determinaints into four areas: individual, organizational, technological, and cultural. This paper highlighted obvious gaps in literature about knowledge-sharing practices in HEIs. The existing studies mainly focuses on small number of determinants in which examined in homogenous cultures. Trust and motivations emerged from the literature as critical antecendents, which can have direct effect on academics' knowledge sharing behaviour (Goh & Sandhu, 2013, 2014; Norulkamar & Hatamleh, 2014). Literature has indicated that organizational culture is critical to promote knowledge sharing among academic staff (Wang & Noe, 2010; Nistor et al., (2014). Research also showed that positive organizational culture alone might not facilitate KS among

academics (Hislop, 2009). Research suggest that it is important to supplement positive culture with other behavioural elements like motivations and use of right technology as communication channels (Riege, 2005; Cheng et al., 2009) . Although, there has been small number of cross-cultural studies conducted to date, the results suggest that HEIs need to pay close attention to cultural characteristics in developing effective KS programs among academics. In summary, while the benefits of knowledge sharing have been recognized in the organizational knowledge sharing literature (Casimir et al., 2012; Wang & Noe, 2010), it is quite surprising that little research has been conducted in higher learning institutions, especially among the academic community where they are considered special knowledge workers. Such research is needed from a culturally specific perspective.

7.1 Theortical Contribution

The literature review showed that understanding of KS in HEIs is fragmented and does not comprehensively consider numerous factors that might influence academics to share their knowledge. This study expanded previous research by outlining a set of wider individual, organizational, and technological elements that are likely to affect KS behaviours in the HEI context. A prominent feature in need of further consideration is the role that larger culture plays in knowledge sharing, including ideas and attitudes about knowledge-sharing. The differences in attitudes and determinants described above may well be attributed to culture to some extent, as the studies reflect a variety of geographical regions and attitudes.

7.2 Practical Contribution

it is evident from this review that HEIs have knowledge supporting culture, and KS is practiced in many fronts in different ways. However, it is also apparent that the process of

managing KS can be augmented. Knowledge sharing is vital for all organizations including higher learning institutions. In a knowledge-based economy and increased fierce competition for government funding, universities employ knowledge management systems and knowledge-sharing programmes to gain a competitive edge. Therefore, University leaders must promote knowledge-sharing programs by instituting adequate KS and KM policies and procedures to encourage and support knowledge sharing culture. This review revealed that academics' attitudes are strong predictors of intentional behaviour and actual sharing of knowledge. University officials should promote positive attitudes towards sharing behaviours by addressing some academics' fear of losing knowledge power and by reassuring their position and value in the institution.

7.3 Limitation and Future Research

It is important to recognize that all academic studies have limitations. This paper used seven databases (Scopus, Education Resource Information Centre (ERIC) Academic Search Complete, Academic Search Premier, ProQuest, and JStor) to identify KS studies. However, the likelihood of missing related articles still exisit. Yet, the authors find it sensible to assume that that using Jesson et al. (2011) literature review process coverd significant and representative portion of KS studies. Future studies can consider other academic databases. Despite the limitations, the comprehensive review of existing KS research can assist identification of future research areas. According to Table 3.1, the majority of the studies of knowledge sharing among academics were conducted in Malaysia. While this is good for Malaysia, other regions and countries must invest in quality research in this area, as it is essential for the development of a nation's higher education system. The relationship between nation and educational institutions is a significant point of interest that is likely to impact

knowledge sharing. Future research are also needed to understand how different cultures would impact on knowledge-sharing practices in other countries and regions. Majority of studies reviewed on HEIs focused on views from academics; additional views from academic leaders, managers, administrators and government officials need to be considered**.**

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