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Knowledge Sharing in Malaysian University between Pure Science and Social Science Academics

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Abstract

In Malaysian universities, knowledge sharing is a key factor in improving the informational pool and providing students with fresh knowledge. Comprehensive research on knowledge sharing among university academics, particularly those from different streams, has not gotten much attention. The goal of this study was to compare academicians from two different streams; namely pure science and social science on three knowledge sharing factors: organizational factor, technological factor and individual factor. This research is conducted utilising a series of survey instruments among academicians at Universiti Kebangsaan Malaysia (UKM). Results from this study recognized that the two groups of academicians equally endorse that all factors are critical especially reciprocal benefits and knowledge self-efficacy under individual factors, but significant factors that are considered moderately central are organizational rewards under organizational factors and system quality from the technical factors. These findings demonstrate that, while there are no major disputes with academics' individual factors in knowledge sharing, UKM's organization and technology in knowledge sharing have room for improvement, specifically in terms of organizational rewards and system quality.

Keywords: Knowledge Sharing, Organizational Factors, Technological Factors, Individual Factors, Pure Science and Social Science, Malaysian University.

Introduction

Due to academics' active participation in the knowledge economy and the growth of Malaysian institutions, there is a unique atmosphere for academics to share information. As a result, it is essential for all academicians to understand knowledge sharing and the ramifications of implementing knowledge sharing in their businesses. Academicians must be aware of the necessity of expanding their knowledge in order to serve as a hub for the creation, sharing, and acquisition of knowledge. Much has been said about knowledge sharing, but less has been said about fields or streams (of science) among university academics, particularly between pure science and social science. Academicians in higher education should have understanding of the three primary components that make up the

knowledge sharing process; namely organizational, technological, and individual factor (Lin, 2007).

One of the elements influencing how knowledge is shared is organizational factors. Knowledge sharing is regarded as one of the important strategies to boost the effects of knowledge in companies (Quinn et al., 1996). Contact and communication between coworkers on an individual basis, in project teams, or across projects may turn individual knowledge into organisational knowledge, and these knowledge-sharing activities can help to advance knowledge to a higher degree (Nonaka et al., 1994). Similar to this, a company may convert individual expertise into organizational knowledge through information sharing..

Self-determination theory has been used to often contest employee motivating knowledge sharing behaviour (Ryan & Deci, 2000). There are a few well-known components that lead towards the success of knowledge sharing within individual factors such as trust, knowledge self-efficacy (Van Acker et al., 2014) and reciprocal benefits (Chennamaneni et al., 2012; Lin, 2007). Lai and Lee (2007) mentioned that self-efficacy, job autonomy and trust directly motivated the craving to share knowledge.

The core tenets of knowledge management have been the same from its inception on information technology and technology-driven processes (Davenport & Prusak, 1998) while organizational culture, structure and information technology impacted workers' ability to share information (Lee, 2001). Orlikowski (1992) stated two main components in the concept of technology. Many have recently joined online groups to share data, cooperate on research, and exchange messages that give insights on knowledge sharing (Liao et al., 2013).

Knowledge Sharing in Brief

Knowledge is defined in this study as a combination of experience, values, contextual information, and proficient comprehension (Davenport & Prusak, 1998), that many studies and practitioners have highlighted as an important and low-cost source of organizational success (Quinn et al., 1996; Albert & Bradley, 1997). Organizations may not be able to thrive in the Knowledge Era unless they have a comprehensive plan for controlling and impacting the value of their intellectual assets (Abell & Oxbrow, 2001). As a result, a great number of small and large firms are turning to knowledge management approaches to manage and utilise their whole organizational information (Davenport & Prusak, 1998). In this context, knowledge management refers to the process of discovering, selecting, and disseminating evidence and information that is vital to company operations (Gupta & Govindarajan, 2000). Since knowledge sharing happens through interactions between people, organisations, and technology, companies should take these variables into account (Noor et al., 2014).

Previously, corporate entities regulated knowledge sharing research, with the ultimate goal of knowledge sharing being revenue-motivated. However, the problem of knowledge sharing is equally critical for a knowledge-based institution, such as a Higher Learning Institution (HLI), whose primary function is knowledge development, distribution, and relevance (Petrides & Nodine, 2003). With the rising number of HLIs in Malaysia, there is a need for them to improve their expertise in order to identify themselves as a repository of knowledge rather than merely delivering information to students. Unfortunately, there has been little in-depth investigation and research of knowledge sharing among university faculty academics,

particularly in terms of academicians' fields or streams. This inspires the writing of this piece and gives rise to the motivation for this article, which seeks to better understand and comprehend the different streams (pure science and social science) of academics' knowledge-sharing at Malaysian universities based on three aspects: organizational factors, technology factors, and individual factors.

Objective of Study

Consequently, this study is aimed:

- a. to identify the comparison of perceptions of pure sciences and social sciences academicians on organizational factors on knowledge sharing in HLLs.
- b. to identify the comparison of perceptions of pure sciences and social sciences academicians on technological factors on knowledge sharing in HLLs.
- c. to identify the comparison of perceptions of pure sciences and social sciences academicians on individual factors on knowledge sharing in HLLs.

Review of Literature

One of the cornerstones of knowledge management is knowledge sharing. According to the International Labour Organization (ILO, 2006) knowledge sharing is defined as "a process that starts with capturing and organizing knowledge and experience gained from others, then proceeds on to make that knowledge accessible to a broader audience, therefore building new ties across interest groups". Knowledge sharing also includes the transmission or dispersion of knowledge among individuals or organizations as a basis for knowledge operation in order to provide a competitive advantage for the industry (Noor et al., 2014). Lee (2001) has defined the term knowledge sharing as "transmission or dissemination of information from one individual, group, or organization to another", while Hooff & Ridder (2004) have expanded on this viewpoint, stating that knowledge sharing is a process in which individuals exchange knowledge and collaborate to develop new knowledge.

Knowledge sharing raises the possibility of capitalizing on an organization's capacity to meet such needs by developing ideas and capabilities that provide a competitive advantage (Razmerita et al., 2016). In an organization, knowledge sharing is the act of capturing, organizing, reusing, and transferring experience-based knowledge that exists inside the organization and making that knowledge available to others in the firm (Lin, 2007). According to a number of studies, knowledge sharing is crucial since it enables businesses to improve their innovation performance while also eliminating duplicate learning efforts (Wasako & Faraj, 2005).

The skills, knowledge, specialized language, and practice norms that are learned via interaction with others who are engaging in the same exercises over time improve one's intellectual capital, which may be developed either through first-hand experience or through stories told over time (Wasako & Faraj, 2005). Working experience is the knowledge or ability acquired via actual performance, observation, and sensation of a task requiring physical or mental resolve. According to Polanyi (1958), the process of knowing involves some kind of comprehension. Knowledge sharing and competitiveness are related to ongoing routines (Cabrera & Cabrera, 2005). Knowledge from experiences amassed by social groupings inside and between divisions, internally via processes, and even outside through establishments, is crucial for the growth of knowledge sharing (Michailova & Minbaeva, 2012). Knowledge

sharing also refers to the process of sharing information amongst individuals whose understandings, experiences, and knowledge are pertinent to the current job (King, 2007) as knowledge sharing attempts to enhance and facilitate the exchange of tacit knowledge among members in a company (Trivellas et al., 2015). Individuals who have a better grasp and experience with their expertise are more likely to share it. However, reasons or motivations that inspire them to use knowledge sharing in the workplace must exist.

On the other hand, knowledge sharing is a challenging process since people usually retain information in groups or organizations (collective forms) that are scattered within the company and occasionally beyond geographic boundaries (Argote & Ingram, 2000). Knowledge management concerns the preservation, identification, and application of knowledge within an organization. Improving information development and sharing is the biggest challenge in knowledge management since it is always what determines success or failure (Wasako & Faraj, 2005).

Furthermore, knowledge is acknowledged as sticky and causally ambiguous because it is embedded in a complex web of formal and informal interactions, making it challenging for organizations to effectively share it. Knowledge is recognized as socially complex because it is held by people and requires a personal relationship to obtain (Sanchez et al., 2013; Szulanski, 2000)

The capacity to properly manage knowledge is increasingly seen to be contingent on the relationships that exist between people within the firm (Quinn et al., 1996). According to studies, organizational, human, and technology variables all have an influence on employee knowledge sharing programs (Chou et al., 2014).

Organizational knowledge is built on tacit and explicit knowledge, both of which are essential for interacting with one another and for the generation of new knowledge (Nonaka et al., 2000). Since others may readily copy explicit information without tacit understanding, it soon loses value and must be shared with others in order to foster new insights and learning. If tacit information is not recorded and shared throughout the whole company, it may be lost when the person who holds it departs. Here, rather than from either tacit or explicit knowledge on its own, new knowledge or knowledge innovation is created as a result of partnerships between tacit and explicit information (Nonaka et al., 2000). As a result, it is vital to effectively manage and communicate both forms of knowledge, because they give significant benefits to enterprises (Cabrera & Cabrera, 2005). This viewpoint provides a novel viewpoint on the importance of various sorts of information to different people, groups, and organizational entities.

A crucial organizational component that might enhance information sharing is management support. Cabrera & Cabrera (2005) outline that management assistance, a factor in knowledge sharing, is connected to personnel, job design, performance assessment, pay schemes, and drill. Additionally, it was shown that knowledge sharing was favorably correlated with elements like participative decision-making and top-management confidence (Park et al., 2004).

Another crucial organizational aspect that might encourage the exchange of information is organizational reward. Roca & Gagne (2008) discovered that need satisfaction was positively

related to knowledge sharing, and that while rewards based on joint performance, as in team-based rewards and organization-wide incentives (gain sharing, profit sharing, and employee stock options), are also likely to be effective in creating a feeling of collaboration, ownership, and assurance among employees.

Organizational culture, often known as corporate culture, refers to the principles, practises, and frameworks that influence or constrain an organization's ability to produce and share knowledge (Bartol & Srivastava, 2002). For each organization, there is a distinct culture that articulates the identity of the organisation on two scales: seen / visible and unseen / invisible (Bibi & Ali, 2017). The visible (seen) culture of an organisation rotates over time and consists of the business's values, mission, and philosophy. The invisible (unseen) component, on the other hand, is more related with the employees' principles and norms that affects their behaviour and routines (Razmerita et al., 2016). While organizational culture as measured by sharing norms was found to be clearly associated with knowledge sharing behavior in organizations, it was also found that there is a positive relationship between sharing opportunities, which include organizational culture that promotes knowledge use and sharing (Chou et al., 2014). Bock & Kim (2002) establish that expectations to improve working relationships and have a significant influence on organizational success were positively connected with knowledge sharing attitudes and actions, and Park et al (2004) further found that knowledge sharing is encouraged and inspired by cultures that value collaboration, employee support, and autonomy.

Trust, knowledge self-efficacy, and reciprocal benefits are a few individual characteristics with individual factors that contribute to knowledge sharing. Lin (2007) found that self-efficacy, job autonomy, and trust directly affected the propensity to impart information and share knowledge.

In a social setting, trust may relate to a variety of situations, the most significant of which is when one party is prepared to rely on the actions of another party to develop and evaluate expectations. The most crucial component of any affiliation inside an organization is trust, which is also described as the act of making oneself accessible to others based on a favorable judgement of the results of one's efforts (Noor et al., 2014). The level of trust between two parties reflects how much one party believes the other to be trustworthy, fair, or compassionate. This enhances information exchange inside the company and can increase knowledge sharing (Hau et al., 2013).

Employees' desire to share information is influenced by self-efficacy, which is the point at which one's confidence in their own capacity to execute tasks and achieve goals takes hold (Lin, 2007). While the term "reciprocal" often refers to a relationship where one party's actions are met or disregarded by another party's actions. According to the social psychological principle of reciprocity, people will always return the favors that have been given to them (Cialdini et al., 2006). It involves giving back (reciprocating) the same conduct received from the second person earlier.

System Infrastructure is another critical aspect in organization that could make effective knowledge sharing. According to Orlikowski (1992), the scope and function of technology are the two foundations of the concept. There are two categories of studies in terms of the scope

(Ismail & Yusof, 2010). One is study that views technology as "hardware," while the other is research that sees technology from the perspective of "social technology." Early research views technology as having a purpose, but subsequent research concentrates on technology as a product that incorporates human interaction. According to a recent research, technology is a soft deciding factor that has always been a significant element in organisational theory. It is seen as an external component that has an influence but is managed by people and organizations (Orlikowski, 1992; Ismail & Yusof, 2010).

While System Quality entails the use of information systems for enjoyment (such as online games and social groups), practical applications (such as e-learning, e-commerce, and knowledge management systems) are also included. Many individuals utilized virtual groups until recently to share information, cooperate on research, and communicate messages that encouraged knowledge sharing (Van Acker, 2014)

Researchers have identified motivation as a function of reciprocity issues, connections with receivers, and remunerations, in addition to dispositions to share knowledge, workplace culture, inspiration to share, and chances to share as elements that contribute to knowledge sharing success (Ipe, 2003), whereas other scientists feel that both monetary and non-monetary benefits are equally important in fostering knowledge sharing (McDermott & O'Dell, 2001).

Methodology

This research applies a descriptive study on academicians' impressions on different streams among university academicians, namely pure science and social science streams. According to Wiersma (1995), this method is suitable for assessing or calculating a program's outlook, awareness, and accomplishment. The descriptive form is also applied in conjunction with the study's necessity to grasp in its real situation (Konting, 1990). Hence, a survey instrument constructed from the literatures selected is generated for this study. According to Tuckman (1999), a questionnaire is a practical tool for collecting information from the selected respondents. The questions are all positive in type, and respondents were asked to specify their views on a Likert scale.

This study is implemented through a set of survey among research academicians in Universiti Kebangsaan Malaysia (UKM). Academicians are selected from a pool of candidates from 5 different faculties, 2 faculties from the pure sciences stream and another 3 faculties representing the social sciences stream in UKM. Thus, to control the number of respondents, The Sample Size Determination Table by Krejcie & Morgan (1970) is endorsed. The sample size for this research is 38 resulted from reference to Krejcie & Morgan (1970)'s Sample Size Determination.

An expert evaluates the validity of the questionnaire. The term "reliability" conveys to the instrument's steadiness and constancy when measuring a particular idea. The Cronbach Alpha is a common gauge for regulating a concept's consistency is applied. The reliability significant value of the Cronbach Alpha is between 0.0 and 1.0. According to (Konting, 1990), the Cronbach Alpha value with more than 0.60 is often related as the reliability index in an actual research. Thus, in this study, researcher has decided the Cronbach Alpha value that is more

than 0.60 as the reliability value for each section of the questionnaire being conducted. The researcher then piloted an initial study to establish the questionnaire's reliability value.

The determination of the pilot study was to distinguish the questionnaire's strengths and flaws. As a result, ten academicians were chosen to answer the questionnaire beforehand it was circulated. The results uncover that all ten academicians have a comprehensive understanding of the questions. Then, by using the *Statistical Package for the Social Science* (SPSS) program version 21, it is established that the Cronbach Alpha value for all the items of the questions attained more than 0.6. As a result, the questionnaire generated for this study is regarded applicable for usage.

Results and Discussions

Findings and Discussions on Respondents

The background of the respondents are as stated in Table 1. The number of academicians from Pure Sciences consists of 36.9 percent and Social Sciences academicians produce a number of 63.1 percent. Majority of the respondents are Senior Lecturers (44.7 %) with 65% of them have been working with UKM for over 11 years. 73.7 percent of the respondents possess PhD with specific expertise and knowledge in their relevant fields, with 57.9 percent of them engaging in research between 1 to 10 years.

From the demographic data obtained, UKM academicians are generally divided into two streams; pure sciences and social sciences. For the position reflected to their post, they are Professor, Associate Professor, Senior Lecturer and Lecturer. From the data, Senior Lecturers and Associate Professors are the majority with 12 to 20 years of experience of work along with 6 to 10 years experiences in conducting research. All the above indicators express to us that these academicians are vigorous in managing research, which make really vital for them to share knowledge and increase networking in their proficiency to boost their research accomplishments, publication as well as lecturing.

Table 1

Background of the Respondents

<i>n</i> = 38	Numbers	Percentages
Academicians faculty		
Faculty of Science and Technology	2	5.3
Faculty of Technology and Information Science	12	31.6
Faculty of Economics and Management	5	13.2
Faculty of Social Science and Humanities	14	36.8
Faculty of Islamic Contemporary Studies	5	13.2
Position of the Academicians		
Professor	3	7.9
Associate Professor	9	23.7
Senior Lecturer	17	44.7
Lecturer	9	23.7
Academicians years of working		
1-5	8	21.1
6-10	5	13.2
11-20	18	47.4
21 & above	7	18.4
Academicians Highest Qualification in Education		
Doctoral Degree	28	73.7
Master's Degree	7	18.4
Bachelor Degree	3	7.9
Academicians years of Involvement in Research		
1 year & below	2	5.3
2 - 5 years	7	18.4
6 - 10 years	13	34.2
11 - 15 years	8	21.1
16 - 20 years	4	10.5
21 - 25 years	2	5.3
26 years & above	2	5.3

Findings and Results on the Three Factors

Organizational Factors (Top Management Support, Organizational Rewards and Organizational Culture)

Table 2 Organizational Factors

Table 2(a)

Top Management Support

	Low	Moderate	High
Academic Stream			
Pure Science	0 (0.0)	2 (14.3)	12 (85.7)
Social Science	0 (0.0)	6 (25.0)	18 (75.0)

Table 2(b)

Organizational Rewards

	Low	Moderate	High
Academic Stream			
Pure Science	4 (28.6)	7 (50.0)	3 (21.4)
Social Science	5 (20.8)	13 (54.2)	6 (25.0)

Table 2(c)

Organizational Culture

	Low	Moderate	High
Academic Stream			
Pure Science	0 (0.0)	4 (28.6)	10 (71.4)
Social Science	1 (4.2)	6 (25.0)	17 (70.8)

Table 2(a), (b) and (c) above portray the organizational factor in knowledge sharing applications among academicians of different streams in HLI. From the data, both pure science (85.7%) and social science (75.0%) academicians approved that top management support have a high impact on knowledge sharing between academicians. However, pure science (28.6%) and social science (20.8%) academicians barely believe that organizational rewards are not a key factor in knowledge sharing in HLIs, but organizational culture in HLI is greatly reflected as a motivating factor of knowledge sharing reflected by both pure science (71.4%) and social science (70.8%) academicians.

These findings in general display that both pure science and social science academicians consider that top management support and organizational culture are significant factors in knowledge sharing but it is a dissimilar case with organizational rewards. This is a marker that either in pure science or social science streams, top management in the HLI are greatly reassuring in knowledge sharing among academicians, delivers most of the necessary capacities required, and are pleased with the sharing implementations (Mat et al., 2016b). It is also comparable with the organizational culture, which reveals top management's supports for academicians to involve in colloquiums, workshops and emphasizes the significance of knowledge sharing between academicians (Mat et al., 2021). It is also an indicator that top management in UKM is very much inspirational and accompanying in knowledge sharing among academicians, supplies most of the necessary capacities needed, and is content with the sharing drills (Mat et al., 2016). However, shortage of belief in organizational rewards as an essential factor in knowledge sharing among academicians displays that academicians from both streams absence of material remunerations such as job promotions and budgetary dividend, but sufficient and pleased with the non-material rewards for example acknowledgements and positive standings.

Technological Factor (System Infrastructure and System Quality)

Table 3: Technological Factor

Table 3(a)

System Infrastructure

	Low	Moderate	High
Academic Stream			
Pure Science	0 (0.0)	6 (42.9)	8 (57.1)
Social Science	3 (12.5)	4 (16.7)	17 (70.8)

Table 3(b)

System Quality

	Low	Moderate	High
Academic Stream			
Pure Science	1 (7.1)	7 (50.0)	6 (42.9)
Social Science	1 (4.2)	10 (41.7)	13 (54.2)

Table 3(a) and 3(b) above illustrates the technological factor in knowledge sharing practices among pure science and social science academicians in HLIs. From the data, 57.1% pure science and 70.8% social science academicians are highly assumed that system infrastructure is a central factor in knowledge sharing. However, only half of pure science (50.0%) and 41.7% of social science academicians relatively considered that system quality is a main factor in knowledge sharing.

These findings at large show us that the system infrastructure in pure science and social science streams in Malaysian HLI for knowledge sharing is marginally high where there are sympathetic systems available for instance online system that aids academicians to employ in learning and teaching between each other. Generally, adequate belief in system quality in both pure science as well as social science streams regard as a major factor in knowledge sharing displays that it can still be enhanced in terms of its applicability, accuracy, modern, reliance and simpler access. The applications established in the system infrastructure are substantial in formulating knowledge sharing process a success (Mat et al., 2017; Mat et al., 2021; Mat & Alias, 2022).

Individual Factors (Trust, Knowledge Self-Efficacy and Reciprocal Benefits)

Table 4: Individual Factors

Table 4(a)

Trust

	Low	Moderate	High
Academic Stream			
Pure Science	0 (0.0)	1 (7.1)	13 (92.9)
Social Science	0 (0.0)	11 (45.8)	13 (54.2)

Table 4(b)

Knowledge Self-Efficacy

	Low	Moderate	High
Academic Stream			
Pure Science	0 (0.0)	3 (21.4)	11 (78.6)
Social Science	0 (0.0)	5 (20.8)	19 (79.2)

Table 4(c)

Reciprocal Benefits

	Low	Moderate	High
Academic Stream			
Pure Science	0 (0.0)	3 (21.4)	11 (78.6)
Social Science	0 (0.0)	7 (29.2)	17 (70.8)

Table 4(a), (b) and (c) above portray the individual factor in knowledge sharing functions among pure science and social science academicians in HLI. Majority of pure science (92.9%) academicians assumed that trust is an essential factor in knowledge sharing but only partial of social science (54.2%) academicians consider so. 78.6% pure science and 79.2% social science academicians vastly agree that knowledge self-efficacy is also a key factor in knowledge sharing. And for reciprocal benefits of knowledge sharing, 78.6% pure science and 70.8% social science academicians greatly trusted that it is an inspiring factor in knowledge sharing.

The results above express that knowledge sharing accomplishments among academicians irrespective of streams between pure science and social science in Malaysian HLI are strongly related with the individual factors of "Trust", "Knowledge Self-efficacy" and "Reciprocal Benefit". Thus, every academician must obtain all the three aspects of "Trust", "Knowledge Self-efficacy" and "Reciprocal Benefit"; to expand knowledge sharing practice (Mat et al., 2016b; Mat et al., 2021; Mat & Alias, 2022).

Conclusions

From the data developed, this study demonstrates that knowledge sharing exercises among academicians of diverse streams in a Malaysian HLI, from the "Top Management Support" and "Organizational Culture" aspects are at the reasonable level. On the other hand, the knowledge sharing exercises among academicians of different knowledge streams in Malaysian HLI, from the "Organization Rewards" aspect are observed to be still deficient. This could be treated positively if the management ventures appropriate and proper monetary remunerations among the academicians outshine in knowledge sharing. As for individual factors, all three features of "Trust", "Knowledge Self-efficacy" and "Reciprocal Benefit" are assumed closely connected on knowledge sharing practices for both pure science and social science stream. Academicians from both knowledge fields considered that the "System Infrastructure" from the technological factors are ample, but enhancement in the "System Quality" should be created in order to enrich knowledge sharing among academicians in Malaysian HLI.

Thus, this study articulates to a profounder theoretical understanding of how numerous elements impacting knowledge sharing, particularly the individual factor, technological factor as well as organizational factor relates with the academicians' streams or fields. In term of incidental influence, when connecting these two groups of academicians based on their fields between pure science and social science, the results has showed that irrespective of their fields, their agreement appears to bind each factor. This conveys the function that the factors, which alleged moderate in knowledge sharing applications for instance system quality and organizational rewards spread across both group of academicians steadily.

Therefore, in order for knowledge sharing functions to run proficiently, the university has to develop their system quality, organizational rewards and endorse other factors at its current

level. Thus, the primary outcomes and main contributions of this study are better understanding on how different streams of academics (pure science and social science) connect to the different factors of knowledge sharing respectively and compared between them. All in all, this paper will largely provide major inspiration towards appreciating the relations of streams on knowledge sharing established on the three factors explained above (organizational factor, technological factor and individual factor) and how can universities employ it for their future improvements.

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