

Knowledge Sharing and Implementation of Its Enabling Factors (A Case Study of Three Types of Company in Indonesia)

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ABSTRACT

This research describes how the enabling factors influence knowledge sharing in Indonesia. The samples are 267 employees from three different companies in Indonesia. The results of this research show that knowledge sharing has been well implemented in the three companies. The enabling factors that influence knowledge sharing are at the individual, organisational and technological levels. Among them, the technological factor is found to be the strongest. Employees in Indonesia are very cooperative and helpful in the implementation of knowledge-sharing activities. Although the rewards from the organisation are not high enough, knowledge sharing activities are still very well conducted. In order to increase knowledge sharing activities, more concern and appropriate follow-up are needed, especially with regards to technological factors.

Keywords: Individual factors, organisational factors, technological factors and knowledge sharing

INTRODUCTION

The information technology boom has caused enterprises to realise the shift from the economic resources of controlling land, machines, factories, raw materials and labour forces to the knowledge economy of creating business value through the utilisation of intangible knowledge (Yeh et al., 2006). According to Al-Husseini et al. (2015), knowledge is a multi-dimensional concept consisting of data, information, skills and experiences that may be used in making firm decisions. Further, Al-Husseini et al. (2015) pointed out that

many studies have identified two types of knowledge, tacit and explicit knowledge. Tacit knowledge is difficult to communicate, unlike explicit knowledge much easier to communicate due to its nature.

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The classic view of knowledge indicates that knowledge is the process or action of knowing an experience or something associated with an experience through an individual's participation, while the modern view of knowledge is associated with competitiveness and power. Knowledge is valuable when it can be measured as an asset. Knowledge may help organisation because having knowledge provides ways to solve problems and engage in further innovative activities (Al-Husseini et al., 2015).

Knowledge derives from individual contribution at the workplace. Scholars have integrated individual knowledge carriers into a discourse that manages this accumulated knowledge. In recent decades, knowledge has reached remarkable growth, so that more than 90% of the world's knowledge was created in just one century, the 20th century. Currently, the volume of knowledge is said to double every five years and a half (Nejatian et al., 2013).

Current studies on knowledge management highlight the role of technology and memory systems in knowledge management, knowledge governance and the role of human capital and social factors. One of the reasons why knowledge management implementation has developed so much is that knowledge is considered the main asset for any industry today (Setiarso et al., 2009; Nejatian et al., 2013). The resources of a firm including all its assets, capabilities, organisational processes, attributes, information and knowledge, are controlled by the firm

to enable it to conceive and implement strategies that improve its effectiveness and efficiency (Barney, 1991). Knowledge management implementation is considered as demands, needs and changes that take place in the world (O'Dell & Hubert, 2011; Al-Husseini et al., 2015); the most notable change in our world today is that brought by the Internet and smart devices that have introduced the dimension of the virtual into our everyday life, increased competition globally and is slowly diminishing print media while increasing digital media. All of this overwhelming change requires knowledge management. Recognising this need, many companies today are willing to develop knowledge management resources. Companies realise that knowledge management will improve their performance and increase their competitiveness (Yeh et al., 2006; Wu & Chen, 2014).

Implementing knowledge management in companies will impact the performance of the organisation. Organisational performance means the degree to which companies have achieved their business objectives. The indicators of organisational performance include organisational learning, profitability and other financial benefits (Lee & Choi, 2003). Thus, scholars agree that knowledge management is very beneficial for an organisation. This has caused knowledge management to be of crucial importance in the public sector and the private sector for both organisations and individuals, and it has grabbed people's attention and generated significant discussion. According to Massingham

(2014), knowledge management manages what the firm knows, that is, its knowledge resources. It is also about decision-making and delivering corporate governance in terms of planning, risk management and budgeting, including in knowledge management toolkits such as strategy, creation, retention and measurement. O'Dell and & Hubert (2011) defined knowledge management as a business that enables information and knowledge to grow, flow and generate value. Nejatian et al. (2013) stated that knowledge management is a discipline that promotes an integrated approach to identify, capture, assess, retrieve and share all of an enterprise's information assets. These assets can include databases, documents, policies, procedures and previously uncaptured expertise and experience of individual workers. Many researchers have emphasised three major factors for managing knowledge: enablers, processes and organisational performance (Lee & Choi, 2003; Yeh et al., 2006; Lin, 2007). Enablers are the mechanism for fostering individual and organisational learning and also facilitating employees' knowledge sharing within or across teams or work units (Lin, 2007). According to Yeh et al. (2006), knowledge management enablers are the mechanism for the organisation to develop its knowledge and also to stimulate the creation of knowledge within the organisation as well as to share and to protect it. Knowledge management is made up of four main processes are: (1) creating; (2) storing/retrieving; (3) transferring/

sharing; and (4) applying knowledge. Among the four processes, knowledge creating and sharing are the most important for conducting knowledge management (Lee & Choi, 2003; Al-Husseini et al., 2015).

However, building knowledge management in companies is not easy. Out of the four processes of knowledge management, knowledge capture, knowledge sharing, knowledge storing and knowledge application, the most difficult to implement is knowledge sharing. The fundamental problem faced by organisations is that many employees lack the desire to share knowledge with other employees in the organisation (Casimir, 2012).

Knowledge sharing can be viewed as a socialisation and learning process for workers in order to generate organisational innovations through the development of new ideas (Setiarso et al., 2009). Knowledge sharing is the main process of knowledge management in building a company's competitiveness (Sangkala, 2007; Susanty & Wood, 2011). Knowledge sharing gives huge impacts to the creation of learning organization culture, knowledge and innovation (Lin, 2007; Setiarso et al., 2009; Casimir, 2012). Al-Husseini et al. (2015) stated that knowledge sharing processes have positively influenced innovations in Iraq's public universities. Companies in Indonesia have also realised the importance of knowledge sharing implementation to create competitive advantage in business competition and in innovations.

Casimir (2012) mentioned that the social exchange theory argues that knowledge sharing occurs due to the reciprocation of favours received such as job security, status, balance of power and maintenance of future relationships. Lin (2007) stated that a company can successfully promote knowledge sharing culture not only by directly relating knowledge sharing with other business strategies, but also by changing employees' behaviour and habits to promote desire for and consistency of knowledge sharing implementation. Knowledge sharing requires a willingness to collaborate with others within an organisation because any indisposition to share knowledge may result in inaccurate, incomplete, ill-timed and, in extreme cases, false information being shared.

The integrity of shared knowledge is critical because it aggregates into organisational knowledge, which helps both employees and organisations to improve their competitiveness (Casimir, 2012). There is a lot of literature that addresses the knowledge sharing enablers. Lin (2007) addressed the three enablers of knowledge sharing, which are individual factor, organisational factor and technological factor. According to Yeh et al. (2006) people, leadership and corporate culture are enablers of knowledge sharing too. These factors will influence the work atmosphere so that learning and change can continue to take place. Lin (2007) showed that the three enabling factors have important roles in affecting knowledge sharing.

Willem and Buelens (2009) stated that the concept of knowledge sharing has focussed on one particular aspect of organisational structure: the role of networking, the impact of task structure, informal and formal coordination and incentive structures or technology. Willem and Buelens (2009) also stated that organisational structure dimensions have not explicitly clarified the relationship between structure and knowledge sharing. Lin (2007) stated that knowledge sharing can create opportunities to increase an organisation's ability to fulfil its needs, and also to be a solution and to produce efficiency in creating competitiveness. Through knowledge sharing, knowledge can be spread, implemented and developed. Sharing can stimulate individuals in an organisation to think critically and to generate new knowledge; it also can push useful innovations for the companies (Nan et al., 2013). Kam and Liew (2015) mentioned the different interpretations of frameworks that show that knowledge sharing is primarily affected by people, a knowledge-sharing attitude, the organisational climate, the intention to share knowledge and knowledge-sharing behaviour. The knowledge sharing process is described as a two-dimensional process with members of staff sharing and exchanging their tacit and explicit knowledge (Al-Hussaeni et al., 2015). Lin (2007) assessed the factors causing knowledge sharing based on the knowledge sharing enablers to explain the correlation among the individual factor, the

organisational factor and the technological factor. The individual, organisational and technological factors are the enablers in knowledge sharing activities.

An individual is an object and a subject that shares knowledge. Every individual in an organisation sees, hears, feels and interprets things in a unique way that will inform the sources and interpretations of knowledge. Individuals are unique, so identical clues will be interpreted diversely, leading to varying outcomes (Rechberg & Syed, 2014). Chen et al. (2012) and Nejatian et al. (2013) mentioned that in gaining the best feedback to motivate employees to participate in knowledge sharing, a company should concentrate on human resource management strategies. In this research, the individual factor consists of enjoyment in helping others and knowledge efficacy. Enjoyment in helping others is derived from the concept of altruism (discretionary behaviour that helps others with organisationally relevant tasks or problems). Previous research showed that employees are intrinsically motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, and also because they enjoy it (Lin, 2007).

An organisation is a multi-dimensional construct that is defined differently throughout the literature. For the purpose of this research, this construct is defined as a unit that deploys strategies to encourage knowledge sharing among employees and that is a driving force in creating an environment and culture that influence the

continuity of knowledge sharing. Barney (1991) stated that organisations include a firm structure, formal and informal planning and a controlling and coordination system as well as informal relations among groups in the firm, between the firm and the environment. Organisational culture is also a part of the organisational factor. Organisational culture makes a great contribution to the process of knowledge sharing due to the fact that culture determines basic beliefs, values and norms regarding the why and how of knowledge generation, sharing and utilisation in an organisation. According to Rasula et al. (2012), an organisation can achieve a competitive edge by creating and using knowledge and integrating the knowledge into business processes. It is important that organisational structure is designed to be flexible enough to encourage creating and sharing knowledge across the organisation's boundaries (Nejatian et al., 2013). According to Nejatian et al. (2013), organisational structure is one of the main knowledge management enablers that consists of two variables, centralisation and formalisation. Lin (2007) stated that the organisational factor consisted of top management support and organisational rewards. Top management support is considered one of the important potential influences in organisational knowledge.

According to the literature and the analysis of critical success factors of knowledge management, information technology is one of the three components of knowledge management (Rasula et al., 2012; Nejatian et al., 2013). In order to

support knowledge sharing activities, some organisations use technology adoption like building a portal and creating a knowledge application, among others. Many studies and journals have stated that ICT use has an important role in conducting knowledge sharing (Lin, 2007; Chen et al., 2012). Rasula et al. (2012) stated that the importance of ICT systems in being able to capture and store tacit or explicit knowledge will be stressed. Formalising and storing knowledge into applications allow us to start the knowledge transformation cycle and the process of reshaping tacit knowledge into explicit knowledge. In addition, the usage and quality of IT tools, the quality of information, user satisfaction, rate of usage and efficiency and accessibility of the system are also very important for knowledge sharing. Thus, in this study the authors enter the use of ICT as a technological factor in ongoing knowledge sharing.

In Indonesia, knowledge management has been widely known since 2005 through a programme called Most Admired Knowledge Enterprises (MAKE) Study and Award organised by a research-based institute. This great evolution brought a new perspective to knowledge in the field of business management called 'knowledge management'. Currently, many private companies, government institutions and state-owned enterprises in Indonesia have started to implement knowledge management.

This research study was felt necessary as it can help realise the ambitions of

organisations in Indonesia in pushing their employees to actively engage in knowledge-sharing activities and to create innovations. At least four studies (Lin, 2007; Susanty & Wood, 2011; Casimir, 2012; Al-Husseini et al., 2015) have reviewed knowledge sharing and its enablers for companies in various countries. This study is very important as it will contribute to findings by previous studies from the perspective of Indonesia as an object. The other benefits from the findings of this study are that they can help improve knowledge sharing implementation in Indonesia. This study looked into how technology, individuals and the organisation as the enabling factors influence knowledge sharing. Then companies can concentrate on the factors that have the highest influence on knowledge sharing.

Lin (2007) mentioned that there were differences in knowledge sharing activities that can be affected by individual, organisational and technological factors (Lee & Choi, 2003; Connelly & Kelloway, 2003; Taylor & Wright, 2004). This research uses three important components of knowledge sharing (Lin, 2007) or what is usually called knowledge-sharing enabling factors. They are individual, organisational and technological factors.

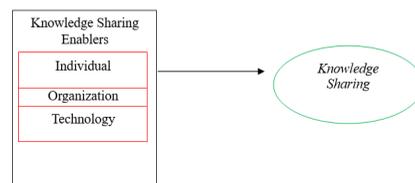


Figure 1: Evaluation Result of Structural Model

INDIVIDUAL FACTORS AFFECTING KNOWLEDGE SHARING

The individual factor refers to humans who work in an organisation. Rrezarta (2013) stated that people in an organisation are the main capital aside from materials and financial aspects. Therefore, companies should consider this carefully. Further, Rrezarta (2013) mentioned that the fundamental strategic aspect in managing human resources is to have motivated employees to achieve sustainable competitive advantages. Individuals also hold an important role because knowledge is embedded in the minds of individuals. So, the key success factor in knowledge sharing is the willingness of individuals to share their knowledge with one another. This routine process may help members of an organisation to solve problems (Al-Husseini et al., 2015).

In this study, the individual factor consisted of enjoyment in helping others and knowledge efficacy. Enjoyment in helping others shows how employees are intrinsically motivated to contribute their knowledge. Their contribution is seen in helping to solve challenging problems. Knowledge efficacy is the belief or capability of employees that their knowledge can help solve problems that are related to work and increase performance effectiveness (Lin, 2007). Employees who believe this can develop a bigger desire to contribute to and to receive knowledge.

Organisational Factors Affecting Knowledge Sharing

In a competitive environment, becoming an adaptive and flexible organisation is very important. Companies should enable employees to quickly cope with changes (Azusa & Hiroyuki, 2013). Al-Qahtani and Ghoneim (2013) mentioned that organisations have to find a system of management that can ensure the transition to a knowledge-based society. The function of an organisation is to be capable in influencing knowledge-sharing activities. The role of top management is to create a conducive knowledge-sharing culture. Top management should support the ambience and the resource providers in the organisation. Rewards may be used to appreciate employees who support knowledge-sharing activities. The rewards function as an encouragement to continue knowledge-sharing activities in the organisation. The form of the rewards does not always have to be monetary (raise of salary and bonus). Non-monetary (such as promotion and work security) rewards also have a significant impact on employees (Lin, 2007).

Technological Factor Affecting Knowledge Sharing

Gressgard et al. (2014) mentioned that technology plays a very important role in knowledge management implementation for pushing innovations. The technological

impact on knowledge-sharing activities through ICT usage to speed up searches, access and get information specifically support communication and collaboration among employees (Lin, 2007).

In this study, the research questions to be answered were:

- a) How do individual, organisational and technological factors influence knowledge sharing simultaneously?
- b) How does the individual influence knowledge sharing partially?
- c) How does the organisation influence knowledge sharing partially?
- d) How does technology influence knowledge sharing partially?

Four hypotheses were formulated for this study. They are:

- 1) H₁: Individual, organisational and technological factors simultaneously influence knowledge sharing significantly.
- 2) H₂: The individual factor significantly influences knowledge sharing.
- 3) H₃ : The organisational factor significantly influences knowledge sharing.

This study also examined the influence of each factor partially on knowledge sharing. The following explanation discusses each enabling factor that influences knowledge sharing.

Individual Factors

This factor consists of enjoyment in helping others and knowledge self-efficacy. Lin (2007) stated that workers who derive enjoyment from helping others may be more favourable towards knowledge sharing and more inclined to share their knowledge. Self-efficacy is defined as the individual judgment regarding capabilities to organise and execute action required to achieve specific levels of performance. Based on Lin's (2007) research, enjoyment in helping others and knowledge self-efficacy are found to positively influence knowledge sharing and knowledge collecting. Therefore, the authors decided to develop a hypothesis that individual factors can influence the process of knowledge sharing.

Organisational Factors

An organization is capable of influencing knowledge sharing through top management by supporting the creation of a supportive ambience and by being an adequate resource provider in the organisation. Top management support is considered one of the important potential influences on organisational knowledge (Lin, 2007). Lin and Lee (2004) proposed that the perception that top management encourages knowledge sharing is necessary for creating and maintaining a positive knowledge-sharing culture in an organisation. According to Connelly and Kelloway (2003), organisational elements such as culture,

climate and collaboration have a positive impact on the elements of knowledge in the context of knowledge management. This led the authors to formulate a hypothesis that the organisation can affect the process of knowledge management.

Technological Factors

The use of Information and Communication Technology (ICT) and knowledge sharing are closely linked, because ICT can enable rapid search, access and retrieval of information, and can support communication and collaboration among an organisation's employees (Lin, 2007). Therefore, technology was assumed to be a factor that impacts knowledge-sharing activities.

METHODOLOGY

This study used the quantitative method while analysis was causal and descriptive. The data were collected by distributing questionnaires to the employees of three types of organisation. The three organisations were a bank, an insurance company and a telecommunications company. All three companies were facing tight competition in a frequently changing business environment. The total number of respondents from these three companies was 267. The model of the research was constructed from previous research by Lin (2007). Questionnaires in this research contained 37 questions consisting of 21 enabling-factor questions and 16 questions related to knowledge sharing. The scale used in the questionnaires was a 4-point Likert scale (1 = strongly

disagree, 4 = strongly agree). This scale was used to measure the responses of the respondents to every item.

Path analysis was used to analyse the pattern of relationships among the variables in order to determine the direct and indirect effects on the independent variables (exogenous) and the dependent variable (endogenous).

RESULTS

Figure 2 shows how individual, organisational and technological factors correlated with knowledge sharing based on the respondents' perception. Figure 2 shows that the execution of knowledge sharing in Indonesia in general was above average, with a score above 3. Individual factors made up two dimensions i.e. enjoyment in helping others and knowledge self-efficacy. The score as shown in Figure 2 was above 3 for both dimensions. This shows that most of the respondents enjoyed helping other employees. They felt happy with the implementation of knowledge-sharing activities. They also believed that they were competent in sharing knowledge and the knowledge they have shared was beneficial for the others.

Included in the organizational factors were top management support and organisational reward. Top management support was rated high by the employees. This means that top management of the three companies were good at encouraging the employees to share their knowledge. The top management paid adequate attention to employees, causing them to be motivated

to share their knowledge. In contrast, the dimension of rewards was rated as being low in value by the employees.

Among the technological factors, the dimension measured was the use of ICT. Based on the results of the descriptive analysis, the use of ICT in knowledge sharing was considered good (agreed) by the employees. This means that the activity of knowledge sharing was facilitated by various technological tools such as an intranet, portals and technological tools. Technology was useful to the employees for sharing their knowledge.

The highest score for the enabling factors of knowledge sharing was for enjoyment in helping others. In contrast, the lowest score was for organisational rewards.

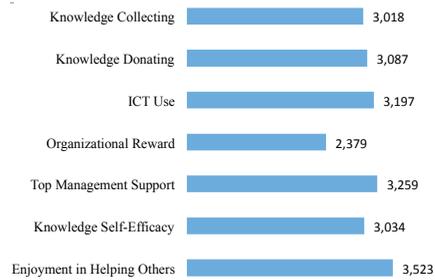


Figure 2: Results of descriptive analysis

Hypothesis Results

Based on the analysis, the value of the Sig Coefficient as seen in Table 1 was lower than 0.05, which was 0.000, thus the hypothesis of H1 was accepted. This means that the knowledge-sharing enablers consisting of individual, organisational, and technological factors simultaneously and significantly affected knowledge sharing.

Table 1
The Influence of the Independent Variables on the Dependent Variable Simultaneously

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	7,570,772	3	2,523,591	46,010	0.000b
Residual	12,779,674	233	54,848		
Total	20,350,447	236			

Table 2 shows how great the impact was from the three independent variables (knowledge-sharing enablers) on the dependent variable (knowledge sharing). It can be seen from

Table 2 that the value of the R-squared (R^2) was 0.372, which meant that the three knowledge-sharing enablers affected knowledge-sharing activities by 37.2%.

Table 2
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.610 ^a	0.372	0.364	740,597

The partial impact of each independent variable (individual, organisational and technological) on the dependent variable (knowledge sharing) can be seen from the value of the Sig recorded in Table 3. Table 3 shows the Sig values of the three factors as being 0.000 (less than 0.05). This

means that Hypotheses H₂, H₃ and H₄ were accepted i.e. individual, organisational and technological factors partially influenced knowledge sharing. The result of the path analysis model that explains the overall correlation among the variables is described in the model given in Figure 2.

Table 3
Coefficient Values of Each Enabling Factor

Model	Unstandardised Coefficients		Standardised Coefficients		Sig.
	B	Std. Error	Beta	T	
	14,244	3,698		3,851	0.000
Individual (X ₁)	0.602	0.134	0.266	4,491	0.000
Organisation (X ₂)	0.458	0.098	0.263	4,692	0.000
Technology (X ₃)	0.925	0.207	0.273	4,476	0.000

The coefficient impact value of the individual factors on knowledge sharing was 0.266; from the organisational factors on knowledge sharing it was 0.263; and from the technological factors to knowledge sharing it was 0.273. The correlation value between the individual variables to the organisational variables was 0.272; the correlation between the organisational variables to the technological variables was 0,355; and the correlation between the individual variables to the technological variables was 0,47. Thus, the structural equation for the path analysis was:

$$y = 0,266X_1 + 0,263X_2 + 0,273X_3 + 0,628$$

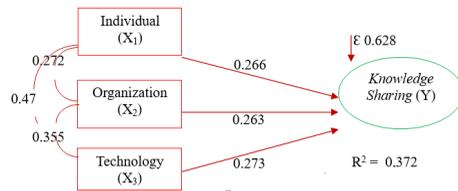


Figure 2: Results of structural model

CONCLUSION

The results showed that knowledge-sharing activities were well conducted. In this study, it was found that all knowledge-sharing enabling factors significantly influenced knowledge sharing, and that the technological factor was the most

affecting factor on knowledge sharing. The individual and organisational factors made contributions that were almost equal to knowledge sharing.

In this research, the individual factor was measured from two dimensions, which were enjoyment in helping others and knowledge self-efficacy. The result showed that the employees derived high enjoyment in helping others. This illustrates that the employees enjoyed sharing knowledge. On the other hand, organisational reward had only a moderate value (or not too high). This fact proved that employees truly liked helping others. Employees perceived that their contribution to knowledge sharing did not really need to be rewarded. Although the companies did not pay much attention to rewarding the employees who actively shared their knowledge, knowledge-sharing activities were still implemented as an important work function. This is because the employees did not expect any reward in sharing their knowledge, but simply enjoyed helping others. This attitude bodes well for the companies. Employees are highly aware of the corporate good of sharing their knowledge. This is a good foundation for the companies to build a knowledge-sharing culture. Later, they may easily develop knowledge-management systems.

Based on the path analysis process results, the organisational factor had the least impact compared to the individual and technological factors. Since rewards are a part of the organisational factor and as discussed before, the employees did not

place too high a regard on the rewards, the impact of the organisational factor dropped. However, top management support was still felt to be needed in the role of increasing knowledge sharing.

Among the three enabling factors have were tested, the technological factor obtained the highest value. In this factor, there was only one dimension involved, namely, the use of technology. In this case, the availability of technology to support knowledge-sharing activity is needed. Technology is considered the major factor in knowledge-sharing activities in Indonesia. However, this does not mean that technology is the single factor that can accelerate the formation of knowledge-sharing activities within an organization. Two other factors need to be considered by an organisation in order to accelerate the formation of knowledge-management activities. This finding was in contrast to a previous study conducted in Taiwan, which showed that the availability of technology did not much affect knowledge sharing (Lin, 2007). In Lin's study, it was mentioned that in Taiwan knowledge sharing is largely influenced by the willingness of individuals to help colleagues.

Based on the results of this research, here are several suggestions for organisations on improving the implementation of knowledge sharing among their employees:

- 1) Create technology-based applications to improve and facilitate knowledge sharing activities. The analysis conducted in this study indicated that

the use of ICT has the greatest impact on the implementation of knowledge management.

- 2) Create a programme within the organisation to encourage employees to help one another through knowledge-sharing activities. This ties in with the result of the analysis done in this study that showed that the individual factor ranked second highest in influencing knowledge sharing.
- 3) Create an organisational and management environment that will foster knowledge-sharing activities. Although the organisational factor ranks the lowest in influencing the activity of knowledge sharing, this factor was proven to affect the activity of knowledge sharing.

The development of knowledge management will continue to grow and continue to be the subject of study. This is a good opportunity for researchers to explore and do more research in the field of knowledge management, especially within the sub-field of knowledge sharing. Further study in this area can develop this model by locating other variables of the enabling factors.

Findings from other countries can also enrich this study. Therefore, the development of samples from different countries showing differences from the Indonesian characteristics will be beneficial for the development of this model. Research into knowledge sharing in Indonesia can also consider angles researched in other countries

but not as yet in Indonesia. This can enrich research references in Indonesia and provide insight into how Indonesian culture may give rise to differences in knowledge-sharing activities. One shortcoming of this study was the use of a small number of samples; it can seem especially limited considering the size of Indonesia's population.

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