

## **THE DEVELOPMENT OF INNOVATION CAPABILITY OF SMALL MEDIUM ENTERPRISES THROUGH KNOWLEDGE SHARING PROCESS: AN EMPIRICAL STUDY OF INDONESIAN CREATIVE INDUSTRY**

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### **Abstract**

*The study sets out to examine the influence of individual factors (enjoyment in helping others and knowledge self-efficacy), organizational factors (top management support and organizational rewards) on knowledge sharing processes and whether more leads to superior firm innovation capability. Based on a survey of 305 employees from 92 SMEs at creative industry in BARLINGMASCAGEB area. This study applies partial least squares (PLS) to investigate the research model. The results show that one individual factors (enjoyment in helping others) and one of the organizational factors (top management support) significantly influence knowledge sharing processes. The results also indicate that employee willingness to both donate and collect knowledge enable the firm to improve innovation capability. Future research can examine how personal traits (such as age, level of education, and working experiences) and organizational characteristics (such as firm size and industry type) may moderate the relationships between knowledge enablers and processes. Practical implications, From a practical perspective, the relationships among knowledge-sharing enablers, processes, and firm innovation capability may provide a clue regarding how firms can promote knowledge-sharing culture to sustain their innovation performance. The findings of this study provide a theoretical basis, and simultaneously can be used to analyze relationships among knowledge-sharing factors, including enablers, processes, and firm innovation capability. From a managerial perspective, this study identified several factors essential to successful knowledge sharing, and discussed the implications of these factors for developing organizational strategies that encourage and foster knowledge sharing.*

**Keywords:** Knowledge sharing, creative industries, innovation capability.

### **1. Background**

In line with Indonesian government effort (Indonesian Department of Trade and Commerce) to develop creative industry in Indonesia, the idea of increasing innovation capability of creative industry becomes the most crucial factor in raising competitiveness. In 2009, Indonesian creative industry contribute 4, 75 percent of Bruto Domestic Income (BDI). The development of Indonesian creative industry in 2009 is 7,3 percent each year and it is able to absorb about 3,7 percent million of work labor and it is equal to 4,7 percent of total absorption of new labors. The above mentioned number of the development is higher than Indonesian economic development which is only 5,6 percent (Pangestu, 2008). This fact shows that the potential of creative industry gives huge contribution to Indonesian economy. Creative industry is an industry that comes from the use of creativity, skill, and individual talent to create prosperity and job opportunity by producing and exploiting the power of creation and production of the mentioned individual (Department of Trade and Commerce, 2008). Department of Trade and Commerce mentions that there are 15 areas of creative economy: (1) advertisement; (2) architecture; paintings; (4) handicraft; (5) design; (6) fashion; (7) film; (8) music; (9) art performance; (10) publishing; (11) research and development; (12) software; (13) TV and radio; (14) game; (15) video game (Department of Trade and Commerce, 2008).

The effort to enhance the competitiveness of creative industry requires the increasing of firm innovation which involves all internal firm components. Firm innovation capability can be achieved when there is a total process of participation to sharing knowledge among individuals in the organization to improve their innovation capability (Setiarso et al., 2009., Rahab, 2009). The process of knowledge sharing becomes the media in creating the spirit to innovate by transferring knowledge among individuals to increase individual's competence in making beneficial innovation in supporting the value creation of the corporation (Marr et al., 2009). The process of taking and giving, improving, and doing innovation of each individual will finally affect the improvement of the firm innovation capability (Plessis, 2007). Firm capability to change and use the knowledge determines the level of firm innovation. Van de Ven et al., (1999) state the activity of knowledge sharing in organization supports the firm innovation. Firm innovation is determined by innovation's capability possessed by the organization (Romijn and Albaladejo, 1999). Firm that have and use the knowledge they possessed optimally will be able to increase their ability in adapting the changes through the innovation they have applied so far. The variety of knowledge has effects on enhancing organization innovation capability (Liebowitz, 2002; Lin, 2007). Van de Ven et al., (1999). The activities of knowledge sharing in organization support firm innovation.

Knowledge sharing creates chances for the organization to maximize their ability to provide the internal organization's need and make efficiency in building competitiveness (Reid, 2003). Knowledge sharing can be defined as the culture of social interaction that involves transferring knowledge, experience, and skills among the members of the organization. All kind of knowledge sharing can take place in both level, individual (members of organization) and organization itself. On individual level, knowledge sharing is a communication activity to all workmates to help each other to get a better and faster result or to be more efficient in committing the organization's duty (Lin, 2007). For the organization, knowledge sharing is a process connected to the capturing, organizing, reusing, and transferring experiences based on knowledge in an organization and makes the knowledge accessible for everyone who needs it (Lin, 2007). Knowledge sharing enables the organization to achieve working innovation and reduce redundant learning process (Calantone et al., 2002; Scarbrough, 2003).

Firms can introduce the culture of knowledge sharing to the workers, not only by inserting knowledge management design into firm strategy but also by changing the workers' attitude to support the awareness and commitment in committing the knowledge sharing in organization (Connelly and Kelloway, 2003; Lin, 2007; Rahab, 2010). Due to the above mentioned facts, the previous researches on knowledge sharing only focus on the correlation between knowledge sharing enablers and the process of knowledge sharing (Van den Hooff and Van Weenen, 2004a; Van den Hooff and Van Weenen, 2004b; Bock et al., 2005; Yeh et al., 2006), furthermore; in some other researches, researchers focus on the correlation between knowledge sharing enablers and working innovation (Calantone et al., 2002; Syed-Ikhsan and Rowland, 2004). The empirical research that focuses on the relation among knowledge sharing enablers, knowledge sharing and innovation capability in integrated model is still hard to find. To fulfill this rareness theoretically, this research develops research model that integratively relates among the knowledge sharing enablers, knowledge sharing, and its implication on innovation capability. This research examines individual factors (enjoyment in helping others and confident in knowledge sharing, organizational factors (top management support and organizational reward) on the knowledge sharing process and its impacts on firm innovation capability.

## **2. Theoretical development, research hypotheses and research model**

### **2.1 Theoretical development**

The literature recognizes the existence of different influences on employee knowledge sharing activities, such as individual, organizational, and technology factors (Lee and Choi, 2003; Connelly and Kelloway, 2003; Taylor and Wright, 2004). Referring to the individual dimension, most authors agree that knowledge sharing depends on individual characteristics, including experience, values, motivation, and beliefs. Wasko and Faraj (2005) suggested that individual motivators may enable employee willingness to share knowledge. Employees are motivated when they think that knowledge sharing behaviors will be worth the effort and able to help others. Therefore, the expectation of individual benefits can promote employees to share knowledge with colleagues. Furthermore, referring to the organizational dimension, organizational climate is usually made to capture efficiently the benefits of innovation-supportive culture (Saleh and Wang, 1993). In the context of knowledge sharing, the different aspects of organizational climate are critical drivers of knowledge sharing, such as reward systems linked to knowledge sharing (Bartol and Srivastava, 2002), open leadership climate (Taylor and Wright, 2004), and top management support (MacNeil, 2003; MacNeil, 2004).

Knowledge sharing processes can be conceived as the processes through which employees mutually exchange knowledge and jointly create new knowledge (Van den Hooff and Van Weenen, 2004a). Ardichvill et al., (2003) discussed knowledge sharing as involving both the supply and the demand for new knowledge. Van den Hooff and Van Weenen (2004b) identified a two-dimension of knowledge sharing process that consists of knowledge donating and knowledge collecting. Knowledge donating can be defined as the process of individuals communicating their personal intellectual capital to others, while knowledge collecting can be defined as the process of consulting colleagues to encourage them to share their intellectual capital. Additionally, an important challenge for organizations is which motivations influence both knowledge donating and knowledge collecting and lead to superior firm innovation capability (Jantunen, 2005). Therefore, this study focuses on the relationships between knowledge sharing enablers (i.e. individual and organizational factors) and firm innovation capability by elaborating on the significance of knowledge sharing processes (i.e. knowledge donating and knowledge collecting). Figure 1 illustrates the set of hypotheses considered in the research model that is discussed below.

## **2.2 Research hypotheses**

### **2.2.1 Individual factors as determinants of knowledge-sharing processes**

Enjoyment in helping others is derived from the concept of altruism. Organ (1988) defined altruism includes discretionary behaviors that help specific others with organizationally relevant tasks or problems. Knowledge workers may be motivated by relative altruism owing to their desire to help others (Constant et al., 1994; Davenport and Prusak, 1998). Previous research shows that employees are intrinsically motivated to contribute knowledge because engaging in intellectual pursuits and solving problems is challenging or pleasurable, and because they enjoy helping others (Wasko and Faraj, 2000; Wasko and Faraj, 2005). Knowledge workers who derive enjoyment from helping others may be more favorable oriented toward knowledge sharing and more inclined to share knowledge – in terms of both donation and collecting. The following hypothesis thus is proposed:

H1a: Enjoyment in helping others positively influences employee willingness to both donate knowledge.

H1b: Enjoyment in helping others positively influences employee willingness to collect knowledge.

Self-efficacy is defined as the judgments of individuals regarding their capabilities to organize and execute courses of action required to achieve specific levels of performance (Bandura, 1986). Self-efficacy can help motivate employees to share knowledge with colleagues (Wasko and Faraj, 2005). Researchers have also found that employees with high confidence in their ability to provide valuable knowledge are more likely to accomplish specific tasks (Constant et al., 1994). Knowledge self-efficacy typically manifests in people believing that their knowledge can help to solve job-related problems and improve work efficacy (Luthans, 2003). Employees who believe that they can contribute organizational performance by sharing knowledge will develop greater positive willingness to both contribute and receive knowledge. The following hypothesis thus is proposed:

H2a: Knowledge self-efficacy positively influences employee willingness to donate knowledge.

H2b: Knowledge self-efficacy positively influences employee willingness to collect knowledge.

### **2.2.2 Organizational factors as determinants of knowledge sharing processes**

Top management support is considered one of the important potential influences on organizational knowledge (Connelly and Kelloway, 2003). Numerous studies have found top management support essential to creating a supportive climate and providing sufficient resources (Lin, 2006). MacNeil (2004) emphasized the importance of the visible top management's support to organizational knowledge sharing climate. Moreover, Lin and Lee (2004) proposed that the perception of top management encouragement of knowledge sharing intentions is necessary for creating and maintaining a positive knowledge sharing culture in an organization. Consequently, this study expects that top management support positively influences employee willingness to share knowledge with colleagues—both in terms of donating and collecting. The following hypothesis thus is proposed:

H3a: Top management support positively influences employee willingness to donate.

H3b: Top management support positively influences employee willingness to collect knowledge.

Organizational rewards indicate what the organization values shape employee behaviors (Cabrera and Bonache, 1999). Organizational rewards can range from monetary incentives such as increased salary and bonuses to non-monetary awards such as promotions and job security (Davenport and Prusak, 1998; Hargadon, 1998). Several organizations have introduced reward systems to encourage employees to share their knowledge. For example, Buckman Laboratories recognizes its 100 top knowledge contributors through an annual conference at a resort.

Moreover, Lotus Development, a division of IBM, bases 25 per cent of the total performance evaluation of its customer support workers on the extent of their knowledge sharing activities (Bartol and Srivastava, 2002). This study thus expects that if employees believe they can receive organizational rewards by offering their knowledge, they would develop Knowledge sharing greater positive willingness to both donate and receive knowledge. The following hypothesis thus is proposed:

H4a: Organizational rewards positively influence employee willingness to donate knowledge.

H4b: Organizational rewards positively influence employee willingness to collect knowledge.

### **2.2.3 Effect of knowledge-sharing processes on firm innovation capability**

It is obvious that a firm's ability to transform and exploit knowledge may determine its level of organizational innovation, such as faster problem-solving capability and enhanced rapid reaction to new information. Many scholars stress the importance of knowledge sharing to enhancing innovation capability (Liebowitz, 2002; Lin, 2006). The definition of Davenport and Prusak (1998) indicates that knowledge is personal. Organizations can only begin to effectively manage knowledge resources when employees are willing to cooperate with colleagues to contribute knowledge to the firm. Knowledge donating aims to see individual knowledge become group and organizational knowledge over time, which in turn improves the stock of knowledge available to the firm. A firm that promotes employees to contribute knowledge within groups and organizations is likely to generate new ideas and develop new business opportunities, thus facilitating innovation activities (Darroch and McNaughton, 2002).

Knowledge collecting consists of processes and mechanisms for gathering information and knowledge from internal and external sources. The process of knowledge collecting in which organizational knowledge becomes group and individual knowledge, involves the internalization and socialization of knowledge. Hansen (1999) suggested that knowledge collecting represents a key aspect of successful project completion, especially for organizations heavily involved in innovation projects. The generation of new ideas and the improvement of firm products, because of a better absorptive capacity, could improve innovation performance (Jantunen, 2005). Specifically, a firm with proficiency in gathering and integrating knowledge is more likely to be unique, rare, and difficult for rivals to replicate, and hence has the potential to sustain high levels of firm innovation capability.

This study expects that employee willingness to both donate and collect knowledge with colleagues is likely to sustain innovativeness and thus better position the firm in terms of long-term competitive advantage. The following hypothesis thus is proposed:

H6a: Employee willingness to donate knowledge positively influences firm innovation capability.

H6b: Employee willingness to collect knowledge positively influences firm innovation capability

## **3. Research Methods**

### **3.1 Research Design**

This Research using quantitative approach and confirmatory research and cross sectional. Method that used on collecting the samples of this research are non probability sampling by purposive sampling that is selecting samples based on specific criterias (Sekaran, 2000). Criterias that used on sample selecting is according to judgment of its workers has been working minimumly for 2 years and also has graduated in senior high school level. Total samples are 305 workers who spread out in 92 small medium enterprises at creative industry subsectors. This research is using primer data. Data gathering on this research is done by using survey method. Data is collected with the way by sending well questionnaire directly and by mail to all respondents (employees) on some creative industries in BARLINMASCAGEB area (Banyumas, Purbalingga, Banyumas, Cilacap, Kebumen regency). Data are analyzed by Partial Least Squares (PLS).

### **3.2 Operational Definition and Measurement**

In this study, items used to operationalize the constructs were mainly adapted from previous studies and modified for use in the knowledge-sharing context. All constructs were measured using multiple items. All items were measured using a five-point Likert-type scale (ranging from 1 strongly disagree to 5 strongly agree). The measurement approach for each theoretical construct in the model is described briefly below. Enjoyment in helping others can be defined as workers' feeling to show their pleasure in helping others through knowledge sharing. A four-item scale measuring knowledge self-efficacy was adapted from a measure developed by Spreitzer (1995) and Lin (2007). Knowledge self efficacy is defined as workers' belief that the knowledge they have can help others to complete their work or solve the problem connected to their job.

Top management support was measured using four items adapted from studies by Lin (2007). Top management support was measured using four items adapted from studies by Tan and Zhao (2003). Top Management support can be summed up as the support provided by the management/ leaders onto knowledge sharing activities in their corporation. Organizational rewards were measured using four items derived from Lin (2007). Organizational rewards is the appreciation given by the organization when the members of the organization share their knowledge to working labor. The rewards can be material incentive, such as: salary raising and bonus or immaterial, such as: promotion and working safety. Knowledge collecting is defined as a process or mechanism to get information and knowledge from both internal and external of firm. Knowledge collecting was measured using four items derived from Van den Hooff and Van Weenen (2004a). Knowledge donating is defined as a process and mechanism to give information and knowledge to other party. Knowledge donating was measured using three items adapted from an investigation by Van den Hooff and Van Weenen (2004a). Innovation capability is organization capability to develop and modify production/services they possessed or to create new production/services. innovation capability was measured using six items derived from Calantone et al., (2002).

#### **4. Data Analysis and Result**

##### **4.1 Data analysis**

The technique of data analysis used in this research is Partial Least Square (PLS) by using the application of Smart PLS V.20 M3. PLS is a Structural Equation Model (SEM) based on component or covariance. PLS is an alternative approach which shifts from SEM approach based on covariance into variance based (Ghozali, 2006). The reasonable reasons of choosing PLS techniques are as follows. First, PLS can be used to handle the latent construct which are modeled both as formative indicator and reflective indicator or the combination of both. Second, in relation with sample, PLS requires minimal sample, that is 10 (ten) time the total indicator for complex construct of the research (Chin, 1998). Third, the data must not be multivariate normal distribution which means that indicator with category scale, nominal, interval and ratio can be applied to the same model. Fourth, PLS can be used both for theory confirmation and prediction. Fifth, PLS is a powerful model analysis since it does not base on mass assumption, such as normal data distribution and free-multicollinierity (Ghozali, 2006). The high multicollinierity will increase error standard of estimated coefficient so that the risk of the occurrence of eliminating the impact of predictor variable theoretically of regression model as a non-significant variable will increase (Field, 2000; Pirouz, 2006) The PLS technique analysis uses two steps; the step of measurement model analysis which examines the validation and reliability. The next step is structural model analysis which examines the correlation between the hypothesized variables.

##### **4.2 Measurement Model**

Measurement model connected to the instruments' validity is tested by using convergent validity and discriminant validity. To test the convergent validity, Average Variance Extracted (AVE) and communality are considered. Convergent validity can be completed if the construct has AVE and communality above the minimal level 0.5 (Hair et al., 2006). Based on table 1, it can be seen that all constructs have AVE and communality  $\geq 0.5$ . Based on the above mentioned criteria, it can be concluded that the convergent validity is completed. It means that the items used to measure the construct do measure the construct. There are two procedures to measure discriminant validity. First, each item in construct must have high loading in construct and the cross loading is lower than item loading in the construct. Second, by comparing the AVE square root of each construct and other inter-construct correlation. If the root square value of AVE is higher than the correlation between constructs, it means that the discriminant validity is completed (Fornell and Larcker, 1981). The items that do not have high loading in their construct but they have high loading on other constructs, can not be used in further analysis. The result of convergent validity can be seen on table 2.

To find out the discriminate validity, cross loading can be seen. The value of cross loading can be seen on table 2. Table 2 shows both the loading value of item with its measured construct and item with other construct. Loading value in bold shows the loading item with its measured construct. Discriminant validity is fulfilled if the item loading value of the construct is higher than loading value of other construct. By referring to table 2, it can be seen that discriminant validity is fulfilled if item loading value with its measured construct (bold printed) is higher than item loading value of other construct. Another technique to measure the discriminant validity is by comparing AVE root square of each construct with the correlation of other construct. Table 3 and table 4 are the value of AVE root square and the correlation of other construct. Based on table 3 and table 4, it can be seen that the value of AVE root square (bold printed) is higher than the correlation between constructs.

Hence, by referring to this indicator, discriminant validity is also fulfilled. The measurement model connected to the construct-reliability testing is measured by using composite reliability with its minimal limit 0.7 (Nunnally and Bernstein, 1994); Ghazali, 2006). Table 5 shows that composite reliability value of each construct is higher than 0.7. This indicates that the construct of the research is valid. Based on table 5, it can be concluded that composite reliability value of all constructs are  $> 0.7$ . Hence, those constructs have fulfilled the stability and consistency which means that there is a correlation among items in one construct.

### **4.3 Structural Model**

Based on analysis by using PLS software, the t-count and the relation among variables can be seen. The value of t-count can be counted from the value of p-value by using excel calculation with the formula :tdist (value t;df:tail). The output and the relation can be seen on table 5. Based on the value of p-value, it can be traced back that out of 8 hypotheses, 2 hypotheses are not supported and 6 hypotheses are supported with reliability level 95 percent or  $\alpha < 0,05$ . The result of analysis can be seen on picture 3 (the correlation among significant variables are shown in bold line, on the other hand; the correlation among non-significant variables are shown in broken line).

### **4.4 Result**

Based on analysis process in using PLS software t value can be known, and direction of the correlation among variables. According the t value that p value also can be known by calculating with using Ms. Excel with the formulation: tdist(score t;df:tail). The processed of output and direct of correlation can be seen in table 1. Based on the analysis process are shown that from 8 hypothesis, which were just two hypothesis was rejected and the rest are six hypothesis was approved with 95 percent is confidence level or  $\alpha < 0,05$ .

## **5. Discussion**

### **5.1 Effect of Individual Factors on Knowledge Sharing Process**

The result show that someone who has a spirit of helping others people is having tendency want to conduct knowledge sharing with other people. Enjoyment of helping others is an instance of the concept of altruistic (altruism). Altruism is defined as part of the habit to help others in the work or problem that correlated with the organization (Organ, 1998). Someone that have a spirit of helping others is having tendency want to do knowledge sharing with others. This result is supporting some of previous study that found influence of enjoyment to help others by its behaviour (Lin, 2007; Badriah, et al.,; Nuning, 2008; Rahab and Indyastuti, 2009). Related to the influence of self efficacy on knowledge sharing activities, this study show that self efficacy wasn't influencing in knowledge sharing activities and knowledge donating. These results indicate that employees on creative industries in BARLINMASCAREB area haven't had high confidence yet which their knowledge if shared to the other will give benefit to their organization. They felt not confident that their knowledge will give benefit to their organization performances if it shared with others. That is the reason they do not encourage to do knowledge sharing that owned to other employees.

### **5.2 Effect of Organizational Factors on Knowledge Sharing Process**

The study show that the management support is positive influenced on knowledge sharing activities especially on knowledge collecting and knowledge donating. The influence of management support on knowledge sharing activities show that is very important the role of leader on encouraging of knowledge sharing activities happened. Management support/leader is able to motivate employees for doing knowledge sharing with their partners especially in giving and receiving of knowledge. MacNeil (2004) argued that the rule of top management supports which real to build of organizational knowledge sharing atmospheres. In addition, Lin and Lee (2004) proposed that management support related to knowledge sharing activities on the organization will create a culture of knowledge sharing on an organization. The rewards of organizational is indicating that the organization's values is shaping of employees habit (Cabrera and Bonache, 1999). The processed of analysis as statistically showed that the reward of organizational has positive influence on knowledge sharing activities especially on knowledge collecting activities and knowledge donating. It meaning that organizational rewards are playing a role in encouraging the employees to do knowledge sharing activities. These results is consistent with research that done by Lin (2005) who found that organizational rewards is encouraging hotel's employees in Taiwan to conduct knowledge sharing activities. Employees trust is that they will acquire of the reward if they did knowledge sharing activities that can encourage of the willingness to give and receive of knowledge. The rewards that can be used for knowledge sharing activities can be the form of material or non material rewards.

### **5.3 Effect of knowledge sharing activities on innovation capabilities**

This study shows that knowledge sharing activities have influenced innovation capability. These conditions show that knowledge sharing activities conducted by members of the organization can be increasing the organization's innovation capability. This result confirms that innovation is involving a process as a whole from knowledge sharing activities that became enablers for the successful implementation of new ideas, new processes and new products of the company. Jantunen (2005) showed that knowledge sharing cultures are helping companies to improve their innovation capability. The changing process conducted by a company is requiring an effort to develop the knowledge sharing mechanism that would be faster toward the innovation process in giving some of the benefits, such as: Knowledge sharing activities among employees, take of the potential employees to create ideas for the innovation process of the company as well as supporting of employees to conduct some of the creative breakthroughs or initiatives which give benefit in helping to solve the obstacles that the company's faced.

## **6. Implications, limitations, and conclusions**

### **6.1 Implication for practitioners**

This research shows that pleasure to help others support the individual attitude for knowledge sharing. Due to the fact, managers are expected to develop and improve workers' intrinsic motivation for knowledge sharing they have. This research shows that knowledge self efficacy does not affect to the activity of knowledge sharing. This indicates that workers have not got enough awareness that the knowledge they have will give useful support to the corporation if they share it. Hence, managers need to improve the awareness of their workers, that the knowledge they have are assets for the corporation which are very important for the sake of firm improvement. The improvement of workers' awareness for knowledge sharing is significant in improving workers' self confidence to share knowledge. The result of this research shows that the support from top management and organizational achievement has affected the activity of knowledge sharing. Firm policy to appreciate knowledge sharing for the workers can be done by giving support both facilities and infrastructure for knowledge sharing or improving the media for knowledge sharing, giving material or immaterial appreciation. The result of this research also indicates that the activity of knowledge sharing can support the process of innovation. In line with the above mentioned fact, the leaders of the company need to implement the culture of knowledge sharing so that it can create new knowledge which is very beneficial in supporting firm innovation.

### **6.2 Implication for Researchers**

The result of the research shows that the activity of knowledge sharing has effects on the firm innovation. This indicates that the activity of knowledge sharing will support the creation of new knowledge for the organization which is very beneficial in improving firm innovation capability. It shows that knowledge is firm important asset in improving their innovation. Furthermore; the result also confirms that in doing knowledge sharing, individual is supported by individual intrinsic motivation. In addition to the individual factor, organizational factor, such as: management support and organizational appreciation have significant role in creating organizational atmosphere that can motivate workers to commit knowledge sharing.

### **6.3 Limitation and future research**

Some researches showed that there is a correlating between the differentiation of individual and perception toward the culture of knowledge shared (Connelly and Kelloway, 2003). Future research may assess or examine of the role of personal traits (such as: age, level of educational and work experience) as well as organizational characteristics (the size and type of business enterprise) as moderating variables in the correlating between knowledge enabler and knowledge process. Third, this research not consider about all the factors that is becoming enabler factor that plays a main role in order to support every activities of knowledge sharing, such as: communication atmosphere, affective commitment of the employees who able to have influence on knowledge sharing activities. Future research that would be conducting is expected can be considering its factors as a factor that able to play a main role on its activities.

### **6.4 Conclusions**

This study indicate that related to organizational factors, management support and organizational rewards effect on knowledge sharing activities at the organization. Then, related to individual factors, enjoyment in helping others are important factors in supporting employees to conduct knowledge sharing activities. Knowledge sharing activity effect on firm innovation capability.

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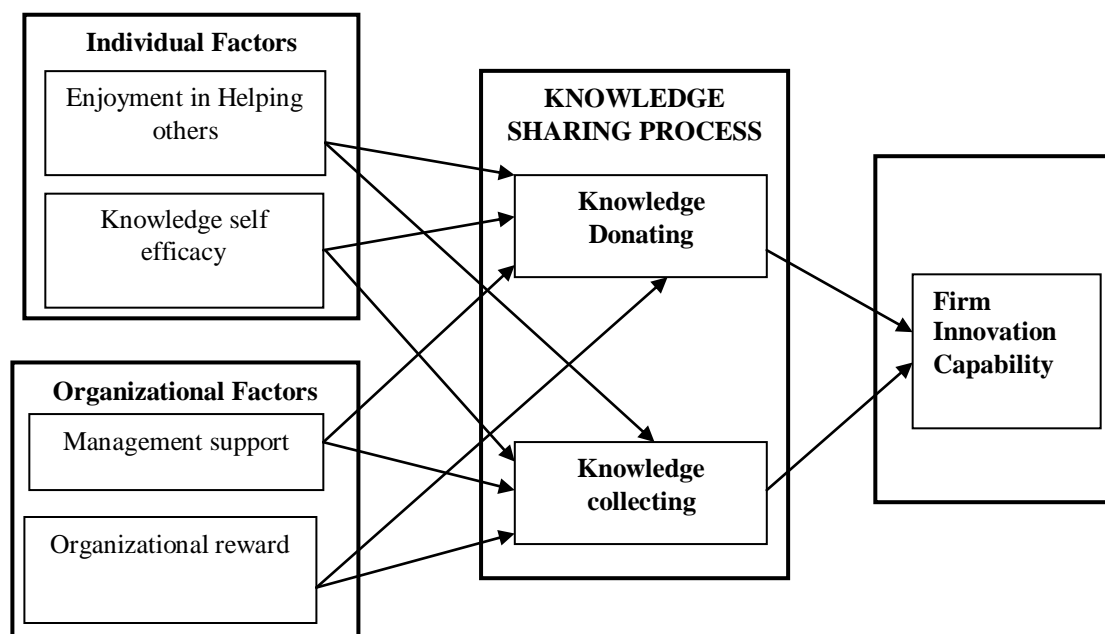
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## Appendiks



**Figure 1. Research Model**

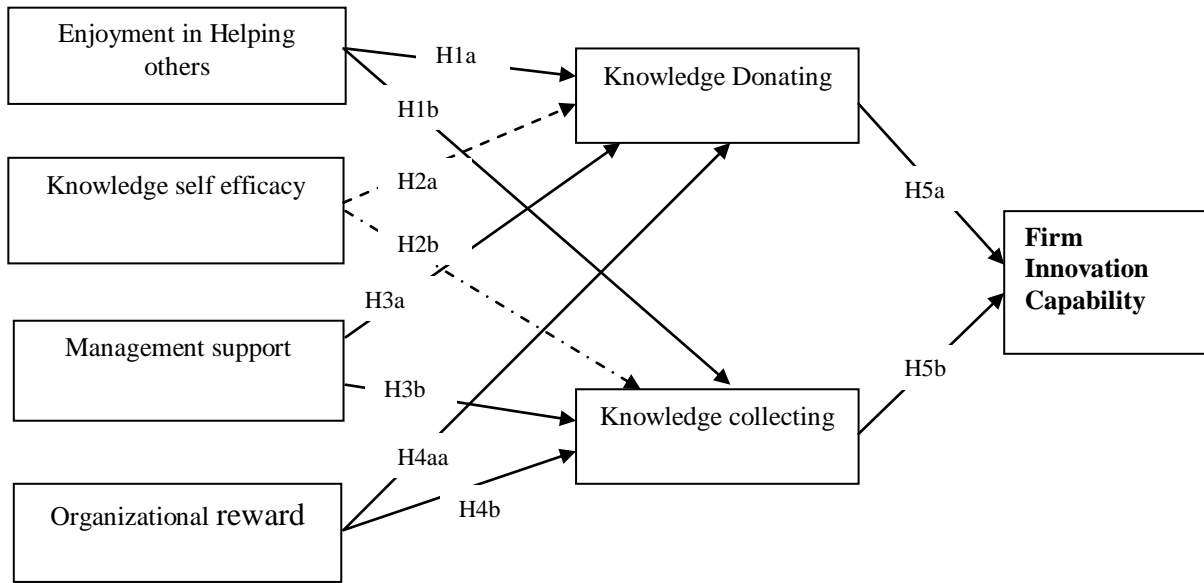


Figure 2. Results of structural model

Table 1. Average Variance Extracted (AVE) and Commuality

Variable	AVE	Commuality
Management support (MO)	0,60	0,57
Knowledge Collecting (KC)	0,57	0,62
Knowledge Donating (KD)	0,72	0,53
Innovation capability (IC)	0,71	0,50
Organizational rewards (OR)	0,81	0,65
Knowledge Self efficacy (OSE)	0,81	0,66
Enjoyment in helping others (EHO)	0,80	0,64

Table 2. Cross Loading Value

	MS	KC	KD	IC	OR	KSE	EHO
MS 1	<b>0,52</b>	0,12	0,31	0,42	0,47	0,38	0,33
MS 2	<b>0,89</b>	0,28	0,27	0,09	0,28	0,11	0,24
MS 3	<b>0,86</b>	0,28	0,16	0,05	0,16	0,16	0,25
MS 4	<b>0,79</b>	0,32	0,09	0,16	0,17	0,17	0,20
KC1	0,43	<b>0,60</b>	0,27	0,25	0,26	0,26	0,28
KC2	0,19	<b>0,86</b>	0,51	0,41	0,44	0,50	0,47
KC3	0,22	<b>0,87</b>	0,49	0,44	0,46	0,46	0,44
KC4	0,20	<b>0,65</b>	0,67	0,35	0,37	0,26	0,23
KD1	0,29	0,58	<b>0,72</b>	0,22	0,41	0,18	0,23
KD2	0,18	0,55	<b>0,91</b>	0,53	0,55	0,53	0,47
KD3	0,27	0,55	<b>0,92</b>	0,50	0,60	0,51	0,40
IC1	0,21	0,47	0,46	<b>0,92</b>	0,34	0,54	0,52
IC 2	0,19	0,41	0,46	<b>0,92</b>	0,36	0,52	0,52
IC 3	0,16	0,44	0,47	<b>0,87</b>	0,40	0,46	0,44
IC 4	0,10	0,43	0,49	<b>0,81</b>	0,42	0,45	0,54
IC 6	0,34	0,25	0,25	<b>0,65</b>	0,33	0,31	0,33
OR1	0,24	0,57	0,55	0,56	<b>0,90</b>	0,59	0,58
OR 2	0,39	0,45	0,58	0,35	<b>0,94</b>	0,55	0,56
OR3	0,30	0,36	0,54	0,24	<b>0,86</b>	0,46	0,46
KSE1	0,24	0,40	0,43	0,44	0,48	<b>0,88</b>	0,68
KSE2	0,22	0,51	0,49	0,55	0,59	<b>0,92</b>	0,61
EHO1	0,30	0,43	0,33	0,52	0,57	0,67	<b>0,86</b>
EHO 2	0,34	0,43	0,37	0,52	0,57	0,66	<b>0,93</b>
EHO 3	0,27	0,46	0,48	0,48	0,55	0,59	<b>0,91</b>
EHO 4	0,27	0,41	0,41	0,54	0,44	0,64	<b>0,88</b>

**Table 3. Comparison between AVE square value with construct correlation**

	MS	KC	KD	IC	OR	KSE	EHO
MS	<b>0,37</b>						
KC	0,32	<b>0,32</b>					
KD	0,27	0,64	<b>0,53</b>				
IC	0,22	0,49	0,52	<b>0,50</b>			
OR	0,34	0,52	0,62	0,44	<b>0,65</b>		
KSE	0,26	0,51	0,51	0,55	0,59	<b>0,66</b>	
EHO	0,33	0,49	0,45	0,57	0,59	0,71	<b>0,64</b>

**Table 4. Value of AVE dan AVE square**

Variabel	AVE	AVE square
MS		0,60
KC		0,57
KD		0,72
IC		0,71
OR		0,81
KSE		0,81
EHO		0,80

**Table 5. Composite reliability**

Variabel	Composite Reliability
MS	0,86
KC	0,84
KD	0,89
IC	0,92
OR	0,93
KSE	0,90
EHO	0,94

**Table 7. The Results of Statistic Test**

Correlation of Other Variables	Original Samples	t-tatistics	p-values	Results
Enjoyment is helping other people → knowledge collecting.	0,044825	2,311462	0,011643*	supported.
Self Efficacy → knowledge colleting.	0,116233	1,144418	0,12787	Not supported
Management support → knowledge colleting.	0,064253	2,292428	0,012206	Supported
Organizational reward → knowledge colleting.	0,052492	4,320472	2,15E-05**	Supported
Enjoyment is helping → knowledge donating.	0,188297	2,554690	0,006227**	Supported
Self efficacy → knowledge donating.	0,093130	0,982184	0,164432	Not supported
Management support → knowledge donating.	0,196688	2,139194	0,017679*	Supported
Organizational reward → knowledge donating.	0,099937	2,432194	0,008579**	Supported
Knowledge colleting → innovation capability.	0,306338	3,704253	0,00019**	Supported
Knowledge donating → innovation capability.	0,116062	3,600635	0,00027**	Supported

\*  $p \leq 0,05$  \*\*  $p \leq 0,01$

**Table 8. Items of construct**

<b>Construct</b>	<b>Indicators/items</b>
Enjoyment in helping others	<ul style="list-style-type: none"> <li>– I enjoy sharing my knowledge with colleagues</li> <li>– I enjoy helping colleagues by sharing my knowledge</li> <li>– It feels good to help someone by sharing my knowledge</li> <li>– Sharing my knowledge with colleagues is pleasurable</li> </ul>
Knowledge self-efficacy	<ul style="list-style-type: none"> <li>– I am confident in my ability to provide knowledge that others in my company consider valuable</li> <li>– I have the expertise required to provide valuable knowledge for my company</li> <li>– It does not really make any difference whether I share my knowledge with colleagues (reversed coded)</li> <li>– Most other employees can provide more valuable knowledge than I can (reversed coded)</li> </ul>
Top management support	<ul style="list-style-type: none"> <li>– Top managers think that encouraging knowledge sharing with colleagues is beneficial</li> <li>– Top managers always support and encourage employees to share their knowledge with colleagues</li> <li>– Top managers provide most of the necessary help and resources to enable employees to share knowledge</li> <li>– Top managers are keen to see that the employees are happy to share their knowledge with colleagues</li> </ul>
Organizational rewards	<ul style="list-style-type: none"> <li>– Sharing my knowledge with colleagues should be rewarded with a higher salary</li> <li>– Sharing my knowledge with colleagues should be rewarded with a higher bonus</li> <li>– Sharing my knowledge with colleagues should be rewarded with a promotion</li> <li>– Sharing my knowledge with colleagues should be rewarded with an increased job Security</li> </ul>
Knowledge Donating	<ul style="list-style-type: none"> <li>– When I have learned something new, I tell my colleagues about it</li> <li>– When they have learned something new, my colleagues tell me about it</li> </ul>
Knowledge Collecting	<ul style="list-style-type: none"> <li>– Knowledge sharing among colleagues is considered normal in my company</li> <li>– I share information I have with colleagues when they ask for it</li> <li>– I share my skills with colleagues when they ask for it</li> <li>– Colleagues in my company share knowledge with me when I ask them to</li> <li>– Colleagues in my company share their skills with me when I ask them to</li> </ul>
Firm innovation Capability	<ul style="list-style-type: none"> <li>– Our company frequently tries out new Ideas</li> <li>– Our company seeks new ways of doing things</li> <li>– Our company is creative in its operating methods</li> <li>– Our company is frequently the first to market new products and services</li> <li>– Innovation is perceived as too risky in our company and is resisted (reversed coded)</li> <li>– Our new product introduction has increased during the last five years</li> </ul>