



Analysis of Knowledge Sharing Using Canonical Correlation Toward Organizational Innovation

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Abstract

This paper is based on the importance of knowledge sharing to create innovation in an organization to overcome the problem of PTPN competition with the private sector. The purpose of this study is to determine the relationship between knowledge sharing variables, which are tacit knowledge sharing and explicit knowledge sharing, on innovation variables, which are speed innovation and quality innovation. The data collection method used a questionnaire with a sample of 100 employees and data were analyzed using canonical correlation analysis. The results of the study showed that there was an influence on each variable. Explicit knowledge sharing had influence on the speed and quality of innovation and explicit knowledge sharing had influence on the speed and quality of innovation. Conclusions from this study were that both variables had a strong relationship, so companies can consider these variables in strategic planning.

Introduction

The era of the high competition of the company requires good human resources to be able to be creative to help the company in achieving its goals. In the global free trade, the company fights over national or international market competitively in the entire industry. The high competition requires the company to innovate in order to result in high-quality product. The product innovation with high quality cannot be separated from the role of human resources in creating intellectual property. Knowledge management has an important role to manage knowledge source and intellectual property in each human resource of the company.

Knowledge management is a process to optimize intellectual property in an organization for organizational interest. The result of knowledge management cannot be seen directly, as Darroch (2005) implied that knowledge of an employee is based on skill and experience as well as the ability to absorb new knowledge. The knowledge absorbed becomes resource in himself. Thus, management and the use of knowledge in organization affect service quality and organization performance.

One of important aspects in knowledge management implementation in organization is knowledge management process. Knowledge sharing in organization is an important process

(Huang et.al, 2011). The successful and efficient knowledge sharing can create knowledge and assist the company to maintain competitive advantage by improving human ability in generating innovation (Setiarso, 2007). Knowledge sharing in an organization can make employees exchange opinions and information. Thus, it will be easier to generate innovations that have useful value for company (Firmaiansyah, 2014). Research conducted by De Jong and Hartog (2003) revealed that innovation is one of ways for company to become more innovative by utilizing employees'ability to innovate. Therefore, job will be flexible. In this context, the employee can assist company through their abilities to result in ideas with their interaction in a company. Thus, it can become way to create new product and the best service process.

This research was conducted at PT Perkebunan Nusantara VII (Persero). It is one of state-owned enterprises in Indonesia that manages plantation commodities, such as tea, rubber, palm, and sugar cane, and their factories. The problem faced by PTPN Plantation at this time is that production in some PTPN is still inferior to private plantations (Ditjenbun, 2017). This high competition causes company to be more creative in innovating. Thus, human resources who have innovative knowledge are needed. Strengthening competitiveness based on the knowledge possessed to create innovation will improve the quality of the organization in achieving the work of the company as its main goal. PTPN VII has carried out knowledge sharing in its organization, which is an effort of increasing employee innovation performance that has decreased in recent years (Annual Report of PTPN VII 2016).

The problem of knowledge sharing in PTPN VII is knowledge management and knowledge sharing. However, the implementation of the evaluation has not been conducted well. This problem can cause the delivery of knowledge sharing to become obstacle because there is the opportunity to deliver knowledge between one employee to another employee that is not well conveyed. As a result, there is no exchange of knowledge innovation cannot be produced. Therefore, research on the effectiveness of knowledge sharing on organizational innovation performance needs to be conducted to determine the effectiveness of knowledge sharing in the organization. The research is expected to improve the performance of organizational innovation in dealing with the problems of plantation business management that occur at this time. In addition, it is expected to be an organizational strategy in developing organizational management to develop better human resources.

Hypothesis Research

Knowledge management in an organization can become one of strategies for improving organization performance to achieve goal and vision and mission statements of the organization. Knowledge management has a large scope and one of the scope is the process of knowledge management. In the process, there is knowledge sharing. Knowledge sharing is one of the important components in knowledge management (Huang et al., 2011). Thus, knowledge sharing becomes a variable that will be studied more closely in its relation to knowledge management. Organizational performance has parts, one of which is the performance of innovation that can be a benchmark. As explained by Hartini (2012), the innovation is needed in a company to improve high performance in accordance with organizational goals.

Framework of APO assessment tools showed that the scope of knowledge management and performance has continuity between one to another in the rotation process. Therefore, this research is more specific to one of these scopes, such as knowledge sharing and innovation, which are parts of each knowledge and innovation management. The relationship between the two, as expressed by Mehrabani (2012), is the excellence/superiority of companies to be able to

produce/create innovation quickly that is also supported by one important factor, namely knowledge sharing. In addition, Mehrabani (2012) stated that knowledge sharing between organizational members tends to produce new ideas to develop and product innovations.

In knowledge sharing, there are 2 indicators, which are tacit knowledge (sharing) and explicit knowledge (sharing) (Hooff & Ridder, 2004). This is revealed by (Zohoori, M., & Samadi, 2013) in their research, that there is significant influence between tacit knowledge (sharing) and explicit knowledge (sharing) on the speed and quality of innovation.

Wang and Wang (2012) conducted research that discussed the effect of knowledge sharing on the speed of innovation and the quality of innovation and it had a positive effect on both. Therefore, the hypotheses are as follow:

- H1: Explicit knowledge (sharing) positively and significantly affects innovation speed.
- H2 : Explicit knowledge (sharing) positively and significantly affects innovation quality
- H3: Tacit knowledge (sharing) positively and significantly affects innovation speed.
- H4 : Tacit knowledge (sharing) positively and significantly affects innovation quality.
- H5: Innovation speed positively and significantly affects innovation quality.

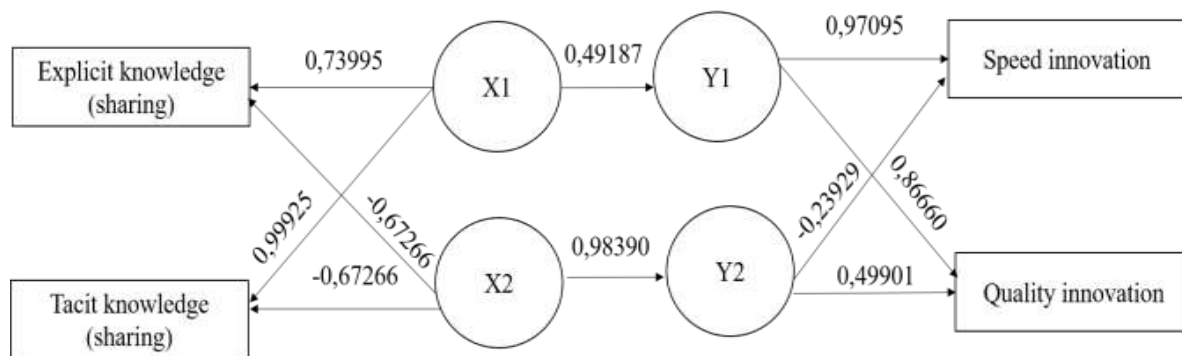


Figure 1. Hypothesis of research

Knowledge Sharing as Part of Knowledge Management

In economics, knowledge has appeared as an asset that must be appreciated and developed. Some authors argued that knowledge had become a direct competitive advantage for companies. It was the best resource and the only sustainable competitive advantage (Amstrong, 2006;Ishak et al., 2012). For organizations, knowledge is defined as something that people know about customers, products, processes, errors, and success (Bollinger and Smith, 2001;Ishaket al., 2012).

Knowledge management was also challenged to create, obtain, save, share, transfer, and utilize either explicit or implicit knowledge at the level of individuals, groups, organizations, and communities through people, processes and technology (Madhoushi et al., 2015). Knowledge management from an operational perspective was considered a systematic process of organization in the form of identifying, creating, acquiring, sharing, and utilizing knowledge (Chivu & Popescu, 2008).

Knowledge management is related to many people and how to obtain shared knowledge such as technology information. Thus, knowledge is very important for human resources, which is different in other ways to make human resources a strong aspect (Amstrong, 2006). In the information era, knowledge of physical assets or financial resources is the key to competitiveness. Carbonell and Escudero (2010) described knowledge management as a

management effort to actively create, communicate, and exploit knowledge as a source for organizations. According to them, the knowledge management components were as follows:

- In technical terms, knowledge management involves centralized knowledge, which is currently shared throughout the organization and codifies the form of knowledge.
- In social and politic term, knowledge management involves gathering knowledge so that it no longer belongs exclusively to individuals or groups.
- In economics, knowledge management is a respond from organization toward needs to intensify their creation and exploitation of knowledge. To be efficient, knowledge management requires the retention of information and knowledge that is open to members of organizations to find important information, knowledge, or best practices.

Therefore, knowledge management is a method learned as knowledge and interaction and so on. Knowledge management explains how to operate. Knowledge management has to be considered an organizational process, which is used to achieve better performance because effective sharing of knowledge and organizational learning, recognizing and developing competencies, and acquiring skills are knowledge that is individually different.

According to Nonaka and Lewin (1994), there were two types of knowledge in an organization, which were tacit knowledge and explicit knowledge. Tacit knowledge is a type of knowledge that is inherent in corporate culture at an unconscious level (Pangil & Nasurdin, 2009). Tacit knowledge requires face-to-face interaction and communication between employees in a company (Koskinen, 2005; Fernie et al., 2003). Tacit knowledge is also subjective, context-specific, and difficult to describe and is not easily expressed or communicated visually or verbally (Nonaka & Toyama, 2002). Tacit knowledge can instill action, commitment, and involvement in certain contexts and come from personal experience in the company. Implicit knowledge is another form of tacit knowledge, which is translated into a type of knowledge that is shared or understood by someone or group of people who cannot express it explicitly (for example, due to cultural factors) without the right atmosphere.

Basically, explicit knowledge can be explained easily (Pangil & Nasurdin, 2009). Spreading and communicating explicit knowledge are easier than sharing tacit knowledge (Ipe, 2003). Explicit knowledge can be shared by using books, video clips, databases, and expert systems, as well as through formal training (Koskinen et al. 2003). Fernie et al. (2003) suggested that explicit knowledge was objective and could be communicated visually or verbally, and more easily elaborated. Explicit knowledge could also be described as the knowledge that had been or could be articulated, codified, and stored in certain media and could be easily communicated to others.

Four versions of knowledge method in the form of spiral developed from the knowledge creation process are called the SECI Process. SECI figure shows continuous knowledge creation and utilization, tacit knowledge and explicit knowledge that spread in terms of quality and quantity, from individual to group, then to the level of the organization (Nonaka & Toyama, 2002).

- 1) Socialization is a basic process in conducting dissemination of knowledge. In the process of socialization, social interactions between individuals occur. Thus, there is an interaction between tacit knowledge, in the form of socialization processes, which are discussion, stories, or sharing experiences.
- 2) Externalization is the process of transforming or translating tacit knowledge into explicit (real) knowledge, generally in written or figure form. The process can help to change an

individual's tacit knowledge into explicit knowledge that can be easily understood by others.

- 3) Combination process of knowledge. The knowledge that has been documented can be disseminated through discovery in the form of documents or through a process of education or training. Knowledge can be further developed by using notes and/or processing as knowledge can also include data or information. Thus, new knowledge has been obtained.
- 4) Internalization process is the change of explicit knowledge into tacit knowledge. It is generally carried out through learning and/or research processes conducted or experiences that are passed by each individual.

Knowledge management in an organization can become one of the strategies in increasing organization performance to achieve goal and vision statement of the organization itself. Knowledge management has a large scope and one of them is the process of knowledge management. In the process, there is knowledge sharing. Knowledge sharing is an important component of knowledge management (Huang et al., 2011).

Knowledge Sharing

Knowledge sharing is defined as the culture of social interaction, which includes the exchange of knowledge between employees through experience and the exchange of ability through the entire organization, that creates a general basis in the need to cooperate (Pasaribu, 2011). The process of knowledge sharing begins at the individual level and extends to the level of groups and organizations (Lin, 2007). According to Hooff and Ridder (2004), knowledge sharing is also interpreted as a lead process of both individuals to exchange knowledge (tacit knowledge and explicit knowledge) so that they can create knowledge as a new solution. Knowledge sharing consists of knowledge that is disseminated and related to allowing worker access to relevant information and building using knowledge networks through information (Hoegl et al., 2003).

The change of tacit knowledge into explicit knowledge is forming the organizational culture of knowledge sharing among all members of the organization. According to Tobing & Paul (2007), the culture of knowledge sharing in organizations depends on: a) The role of the leader in formulating a vision statement, being involved directly, giving support. b) An organizational culture that provides a climate of trust and openness. c) The willingness of the leaders of the organization to promote knowledge sharing and collaboration. d) Organizational awards for knowledge, learning, and innovation. e) The ability of organizational structures to adapt and execute transformation and change processes effectively.

Strategies in knowledge sharing according to Yuliazmi (2005) are: a) Knowledge map, which is the activity of mapping knowledge within the organization. b) talk space, which is the provision of a place that aims to share knowledge among members of the organization. c) Creating smart office layout by designing an effective workspace for learning activities. d) Holding dedicated knowledge sharing events, such as fair activities or forums to share knowledge. e) Using a common language in communicating with all members of the organization. f) Appointing leaders who master the logic of knowledge sharing, monitor the participation of organizational members and become examples of shared attitudes. g) Making change in culture by creating a culture of knowledge sharing. h) Making room for creative tension, which is to unite organizational members to resolve problems. However, the constraints

in knowledge sharing are caused by a) Willing to share knowledge but not having enough time to do it, b) having no knowledge about management skills, c) the absence of commitment from the manager above, d) lack of funds for knowledge management, e) the failure to encourage knowledge sharing to become a culture.

Effectively, knowledge sharing can improve the accumulation of organization knowledge and develop the ability of employees for better performance (Jalote, 2003). Combining knowledge about different employees creates new opportunities and responds to challenges in innovative ways (Mathewet al., 2011). In addition, Lin (2007) argued that the survival of a company can be substantially undermined if employees do not want to share knowledge, with serious foundations being affected.

Innovation as Part of Organization Performance

The concept of performance basically can be seen from two sides, which are employee (individual) and organization performance. Employee performance is the result of individual work in an organization, whereas organization performance is the totality of work achieved by an organization (Pasolong 2010). Pasolong (2010) also explained that organizational performance is the overall effectiveness of the organization for the defined needs of each group with regard to systematic efforts and increasing organizational capacity continuously to achieve their needs effectively. Achieving organizational goals cannot be separated from the resources of the organization that are run by employees who play an active role as actors in an effort to achieve the goals of the organization.

Organization performance basically is responsible for each individual who works in an organization. If each individual in the organization works well and gives their best contribution to the organization, the overall performance of the organization will be better. Thus, organizational performance is a reflection of individual performance. Organizational performance is the cumulative performance of employees and therefore, the higher the performance of employees is, the higher the performance of the organization becomes (Sinambela, 2012).

Organization performance has part such as performance innovation that becomes a benchmark. As explained by Hartini (2012), innovation is needed by a company in order to be able to improve high performance in accordance with organizational goals.

Innovation

Innovation is a creativity that is able to be implemented and gives added value for resources owned. The scope of organizational innovation moves from the development and implementation of new ideas that have an impact on theory, practice, products, or lower scale, such as the improvement of daily work processes and design alone. Therefore, innovation research in organizations can be carried out in 3 levels: the level of individuals, groups, and organizations (De Jong & Hartog, 2003).

Innovation is a choice in coping with the competition of the market and sustainable management. Freeman and Soete (2002) considered innovation as an effort of the company through the use of technology and information to develop, produce and market new products for the industry. In other words, innovation is a modification or discovery of ideas for continuous improvement and development to meet customer needs.

Wang and Wang (2012) argued about study for innovation that can use the speed of innovation and the quality of innovation. The speed of innovation is defined as the time that elapses between the initial development and the main commercialization of a new product or marketing, reflecting the company's ability to accelerate activities and tasks to build relative competitive advantage over competitors in the industry with shortened products.

The speed of innovation is an important element to compete in the market because it can generate superior performance. The positive relationship between the speed and success of new products as a whole has been confirmed empirically (Carbonell & Escudero, 2010). The speed of innovation is also explained as complex social capabilities that cannot be easily developed or imitated by competitors (Slater & Mohr, 2006). It allows the company to stay close with customers and company needs (Tatikonda & Weiss, 2001). Furthermore, the increasing level of competition, the development of technology in the market, and shorter product life cycles put pressure on companies to innovate faster.

Innovation quality concept enables to make a statement about aggregated innovation performance in each domain of an organization by comparing the result of a product, process or service innovation, with potential and process considerations for how these results have been achieved (Lanjouw & Schankerman, 2004). Innovation has a strong relationship with novelty or creativity while quality concepts, such as standardization, low tolerance, and systematic procedures, are inherent. Products or services of quality innovation can be determined through variables such as number, effectiveness, features, reliability, time management, cost, complexity, level of innovation, customer value, and more. Although the quality of innovation is one of the most important factors for companies that implement innovation strategies to compete in the market, it can pose more challenges due to increased complexity, difficulty identifying the need to integrate measurement errors such as relative quote ratios, science relations, and innovation scope (Lahiri, 2010).

The Role of Knowledge Sharing to Improve Innovation

The framework of APO Assessment tools shows that the scope of knowledge and performance has continuity between one another in the process of rotation. Therefore, this study focused more specifically on one of these scopes. There are knowledge sharing and innovation that are part of each knowledge and innovation management. Nanawi (2012) state that the superiority of companies to be able to produce/create innovation quickly is also supported by one important factor, which is knowledge sharing. In addition, Mehrabani (2012) stated that knowledge sharing between organizational members tends to produce new ideas to develop process and product innovations.

Knowledge becomes more important because management considers the value of creativity that enables the transformation of knowledge. The relationship between innovation processes, competitive progress, and strategic knowledge management is an interconnected factor. This shows the importance of knowledge in creating innovation and the importance of innovation for knowledge management (Carbonell & Escudero 2010). Knowledge management creates a culture, in which the value of knowledge and its application can be identified and communicated. In this case, culture can encourage knowledge processes and programs as well as innovation. A conducive culture in an organization can create creative innovation (Plessis, 2007).

Process of knowledge becomes an important variable in knowledge management. Therefore, one of the processes that can be developed into this discussion is the knowledge sharing of innovation. Research by Andrawina et al. (2008) stated that innovative attitudes can

emerge from the attitude of knowledge sharing. The process of knowledge sharing and exchanging opinions easily results in an innovation that has useful values for the company. Knowledge sharing activities that are good can influence the results of innovation produced (Firmaiansyah, 2014). It will generate benefits for the company. The results showed that knowledge sharing had a significant positive influence on innovation (Firmaiansyah, 2014). Research by De Jong and Hartog (2003) stated that innovation is one way for companies to be more innovative by utilizing the ability of employees to innovate. Therefore, work becomes flexible. In this context, employees can help to improve company performance through their ability to generate ideas and use them to create new products and better service processes.

Research conducted by Hu et al. (2009) explained about knowledge sharing and culture in an organization. It was found to have an important influence on the performance of innovation found in organizations whose influence significantly affected one another. This is similar to the research of Zhou & Li (2012), which explained more about knowledge sharing affecting innovation by other variable, namely, radicals. The measurement tool used in this study was a theory about the expansion of knowledge contained in organizations and the analysis used Average Variance Extracted (AVE), with the results showing that the depth of knowledge depended on the acquisition of knowledge and knowledge sharing.

The research of Kimble et al. (2010) explained the process of innovation and knowledge sharing that could affect one another. This research showed the role of innovation in knowledge sharing that can be positive. In addition, there is a study of Sáenz et al. (2011), which explained knowledge sharing as the main thing to improve the ability of innovation by having a positive impact and affecting the level of each innovation in company performance.

Hu et al. (2009) observed knowledge sharing at the individual level and innovative behavior of employees in the whole organization with hierarchical linear modeling as analysis method. The results showed a positive relationship between the two. This shows that knowledge sharing can affect the ability of innovation, as explained by Yesil et al. (2013) who used descriptive analysis in their research. Knowledge sharing ability emerges because of interactions that occur between employees. It can lead to innovation capabilities, so that both perspectives show a positive and significant relationship as explained in the research of Aulawi et al. (2009).

The research carried out by Darroch (2005) explained the role of knowledge sharing in coordination mechanism of company innovation, in which each showed significant results. In addition, knowledge sharing also plays a role in strategic human resource management and innovation performance by having a positive effect (Chen & Huang, 2009). Darroch (2005) explained more about empirical evidence that companies with knowledge sharing capabilities are part of knowledge management and will make resources more efficient. Thus, they will be more innovative and perform well.

Research Methods

The data type used in this research was qualitative and quantitative data. Qualitative data were obtained by interviewing the employees and distributing questionnaires to them. The questions in the interview and questionnaire were related to the impact of the practice and application of knowledge sharing in the organization on innovation. Meanwhile, quantitative data were in the form of numeric data, such as weights on the objectives to be achieved in the final assessment of employee performance at PTPN VII Lampung.

Based on data source, data used in this research were primary and secondary data. Primary data are data obtained and processed by researchers. Primary data obtained through interviews

and questionnaires. The purpose was to find out employee perceptions about the practice and application of knowledge sharing. The secondary data needed in the research were the company annual performance report, company annual report, and reports relating to knowledge sharing such as training plans.

Population in this research was 100 employees of PTPN VII Lampung, divided into three locations: directors' offices, gardens, and palm oil mills in Lampung. Samples were taken randomly, 100 people out of a total of 16,559 people. Respondents in this research were 100 employees of PTPN VII Lampung. The locations for distributing questionnaires to respondents were the office of directors, gardens, and palm oil mills. The questionnaire was related to individual performance so it may improve overall organizational performance. As explained by the research conducted by Yu et al. (2013), knowledge sharing at the individual level and innovative behavior of employees in the whole organization showed a positive relationship.

Data of knowledge sharing and tacit knowledge sharing were collected through a questionnaire using Likert scale. The canonical test equation used Statistical Package Social Science (SPSS) data processing software version 22.

Results and Discussion

Knowledge sharing is identified as culture of social interaction that includes exchange of knowledge between employees through experience and exchange of ability through the entire organization. This creates a general basis for the need to cooperate (Pasaribu, 2011). The process of knowledge sharing starts at the individual level and extends to the level of groups and organizations (Lin, 2007). According to Hooff & Ridder (2004), knowledge sharing is also interpreted as a lead process for both individuals to exchange knowledge (tacit knowledge and explicit knowledge) and together they can create knowledge as a new solution. Knowledge sharing consists of knowledge that is disseminated and related in allowing workers access to relevant information and building using knowledge networks through information (Hoegl et al., 2003).

Tacit knowledge activity in PTPN VII was scientific work conducted by employees who were going to retire. Tacit knowledge was shared by retired employees to work units by submitting scientific work reports. This implementation had run quite well, but the system that specifically regulated the tacit knowledge (sharing) separately had not been implemented properly. Therefore, PTPN VII was planning a mechanism in which the information will be collected using website that can run better than the previous one.

Explicit knowledge in PTPN VII was shared by conducting training and socialization, which were then socialized specifically in work units. This activity was conducted from the initial stages of the assignment until the report was made to be submitted to the forum and a follow-up action was taken if needed. Planning for the implementation of training and outreach was carried out every year and its realization was contained in the Management Report every month. PTPN VII Lampung carried out knowledge sharing not only on the unit, but also outside the unit, for example, by conducting ice breaking and providing motivation events for rubber tappers. The knowledge sharing activity run in PTPN VII was in accordance with Zhou & Li (2012) who stated that knowledge sharing was a transfer of knowledge and changes in knowledge used interchangeably involving sources of knowledge, which in this case, were each work unit.

Besides, knowledge sharing was quite effective in company. Knowledge sharing effectively can increase the accumulation of organizational knowledge and develop the

capabilities of its employees for better performance of employee (Jalote, 2003). Combining knowledge about different employees created new opportunities and responds to challenges in innovative ways (Mathew et al., 2011). In addition, Lin (2007) revealed that the survival of a company could be substantially undermined if employees did not want to share knowledge.

The scope of organizational innovation moves from the development and implementation of new ideas that have an impact on theory, practice, products, or lower scale, such as the improvement of daily work processes and design. Therefore, innovation research in organizations can be conducted in 3 levels: individual level, group level, and organizational level (De Jong and Hartog, 2003).

Innovation process that was conducted in PTPN VII that was managed by Strategic Development and Information Technology Departments (PST) of PTPN VII Lampung included submission of innovation (interview, motivation, logic, experience, etc.) at unit or division level. The innovation was presented to the review team formed by the unit and the general manager to complete supporting data effectively and efficiently. If it was approved, it would be validated, and a minimum of three months trial would be conducted to grow the level of effectiveness, then a service test was carried out. There would be an agreement being made regarding innovation that was otherwise proper in which the one who created and made innovation would hand over the ownership right to the innovation to PTPN VII Lampung.

Characteristic of Respondent

Based on sample data of 100 respondents/employees at PTPN, it was obtained the result that male respondents were 79 respondents. It was more than the number of female respondents, which was 21 respondents. The data also showed that respondents aged 46-55 years were 46 respondents. This was in line with the data in the 2016 annual report of PTPN VII on employee recapitulation. Meanwhile, recent education of PTPN VII employees were dominated by bachelor's degree and master's degree, with 82 people had either bachelor's degree or master's degree. The result also explained that the position level that dominated was staff level (84%) and (31%) of employees had 6-10 years of employee tenure.

Data Analysis with Canonical Correlation

In the canonical correlation test, multivariate normality test was conducted before the analyzed data could be declared as normal data. The multivariate normality test was performed and the data from the test were later used in canonical correlation tests. The results showed multivariate normal distribution with a correlation coefficient obtained 0.971, which was a very high correlation coefficient. The magnitude of the correlation coefficient was between -1 and +1. If the correlation coefficient was $> r$ table or sig value. < 0.05 , it means that there is a significant correlation (Johnson & Wicern, 2007).

In this research, canonical correlation test or test about the relation between variables was conducted to analyze the relation among variables. In this case, the hypothesis test was conducted to find out the significant relationship of the explicit variables of knowledge sharing, tacit knowledge sharing, the speed of innovation, and the quality of innovation. Data analysis was performed using SPSS 22 and the results of the analysis are described in Table 1.

Table 1. Eigenvalues and Canonical Correlations

Eigenvalue	Pct	Cum. Pct	Canon Cor	Sq. cor
0.45023	0.04991	9.98007	0.55718	0,31045
0.04991	9.98007	100.00000	0.21804	0,04754

It was seen that the first canonical function was 0.55 with covariate of 31% percent, whereas the second canonical function of the correlation was only 0.21. Thus, we would only use the first canonical function.

Table 2. Canonical Weight

Variable	1	2
Speed of innovation	0.7212	-1.25252
Quality of innovation	0.34586	1.40335
Covariate	1	2
Explicit knowledge (sharing)	0.05515	-1.42596
Tacit knowledge (sharing)	0.95991	1.05593

Table 3. Canonical Loading

Covariate	1	2
Explicit knowledge(sharing)	0.73995	-0.67266
Tacit knowledge (sharing)	0.99925	-0.67266

From the results in Table 2 and Table 3, it can be concluded that there was significant relation between dependent and independent variables. A positive sign on explicit knowledge (sharing) and tacit knowledge (sharing) meant that a better delivery will also accelerate the speed of innovation and improve the quality of innovation and vice versa. This was in line with the research of Zohoori and Samadi (2013), which showed the same effects of explicit knowledge (sharing) on the speed of innovation, explicit knowledge (sharing) on the quality of innovation, tacit knowledge (sharing) on the speed of innovation, and tacit knowledge on innovation. This is illustrated in Figure 1.

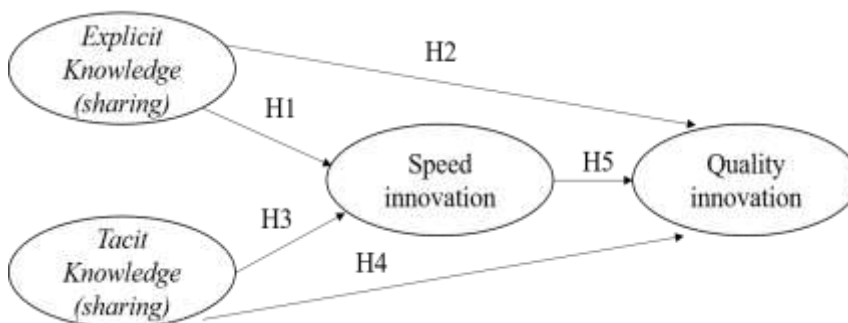


Figure 1. Path diagram canonical analysis

Tacit knowledge (sharing) had bigger correlation value toward innovation process and innovation quality. This was because the tacit process was easier to do in an organization since it could occur through togetherness. Explicit knowledge (sharing) had a lower value because the process required a documented tool.

Based on hypothesis test conducted, the result showed that explicit knowledge sharing affected innovation speed significantly. The results of this study supported previous research, which suggested that explicit knowledge sharing had a significant effect on the speed of innovation (Wang & Wang, 2012). In addition, Wang and Wang (2012) revealed that explicit knowledge sharing contributed to the company's operations through the speed of innovation. Thus, the achievement of company goals could be achieved faster than the target of achievement. Zohoori & Samadi (2013) added that explicit knowledge sharing had an important role in the process of creating innovation and there was an influence from the explicit variable of knowledge sharing on the speed of innovation in an organization.

Explicit knowledge sharing affected innovation speed significantly. Knowledge sharing between employees in a company is a good thing and it must be conducted for the progress of the company. An explicit increase in knowledge is needed to be carried out by the organization by recognizing and using employee knowledge to solve problems and achieve the goals of company competitiveness. Knowledge sharing and the process of disseminating good and true information to employees could be factors in improving achievements in the process of making innovation through the discovery of new ideas, new operating methods, and an increase in the number of new products on the market. Knowledge sharing between employees, whether employees requested the knowledge or received knowledge from other employees, was good to find new ideas and try new operating methods.

Based on hypothesis test, the results showed that explicit knowledge sharing affected innovation quality significantly. The results were in line with Wang and Wang (2012) who stated that there was a significant effect between variables, including explicit knowledge sharing with the quality of innovation in an organization. In addition, Zohoori and Samadi (2013) added that explicit knowledge sharing had an important role in the process of creating innovation and there was an influence of variable knowledge sharing on the quality of innovation in an organization.

Tacit knowledge sharing affected innovation speed significantly. The results of this research were in line with the results of previous research of Zohoori and Samadi (2013), that the variables had an influence on each other. The relationship of these two variables showed more deeply that the speed of innovation also had an important role in tacit knowledge sharing and vice versa. Wang and Wang (2012) explained in their research that the effects of knowledge sharing could be various aspects in the speed of corporate innovation. One model of knowledge sharing in the form of tacit knowledge sharing had an influence in the process of accelerating innovation. This supported the research statement that there was an effect of tacit knowledge sharing on the speed of innovation.

Further, from the hypothesis test, it can be seen that tacit knowledge sharing affected innovation quality significantly. The results of this research were in line with the results of previous research of Zohoori and Samadi (2013), that the variables had an influence on each other. The relation between both variables showed more deeply that the quality of innovation had an important role in tacit knowledge sharing and vice versa. Tacit knowledge sharing had the highest value in creating innovation. In this case, it was explained that tacit knowledge sharing had an important role in the course of the process of creating innovation because it had a positive effect on the results of these activities in the form of innovation quality.

Managerial Implication

Companies can consider good knowledge sharing management to get maximum value in the application of knowledge management. The variable that can be used to increase the value is

the variable in knowledge sharing, which is tacit knowledge (sharing). It is because it had higher value in influencing the two innovation variables, viewed from the canonical correlation test results. In companies, using tacit knowledge (sharing) is easier to do than using explicit knowledge (sharing) because there is a system that regulates the evaluation of tacit knowledge (sharing).

The findings in this study indicate that tacit knowledge (sharing) becomes the variable in knowledge sharing that has the most powerful influence on the speed and quality of innovation. Companies need to improve tacit knowledge (sharing) in the process of delivering knowledge to employees who have not participated in training activities, workshops, outreach, ice breaking, and comparative studies. The reports of the results of these activities should not be only submitted, but also shared with the unit to ensure all employees know the knowledge delivered at the activity. Companies can create a forum or space to store information so that employees who are not present or do not understand can access or ask questions related to the knowledge that has been obtained in training activities, workshops, outreach, ice breaking, and comparative studies. In addition, it should not be only done in one particular unit. All employees need to know the knowledge, so sharing can be done between units as well.

The benefits of the knowledge in the organization can continue to increase with the sharing of each employee who will retire. Those employees have a lot of knowledge because compared to other employees, they have longer tenure in the organization. The amount of knowledge collected can create ideas that can lead to innovation for organizations. In addition, more knowledge can create good quality human resources and can be a strategy in the company's competitiveness.

Conclusion

There are relation and effect in four variables of explicit knowledge sharing, tacit knowledge sharing, innovation speed, and innovation quality. It was shown that four variables could become measurement indicators of knowledge sharing in the company. Future research may consider assessing the relation of knowledge sharing and innovation with other variables or using other tests, such as SEM PLS or APO Assesment Tools.

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