

Improving Innovation Capability Trough Creativity and Knowledge Sharing Behavior

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Abstract. Innovation capability is a key factor to survive in a hyper-competitive situation. This study aims to identify the influence of knowledge sharing behavior towards creativity and its impact towards innovation capability. This study uses quantitative and qualitative approach promoting the paradigm of effectual causal analysis. The factual analysis of the research is conducted based on a survey of 145 employees, an interview, and focus group discussion in a telecommunication firm in Indonesia. The results of the study indicate that knowledge sharing behavior has a significant positive influence towards creativity, and creativity has a significant positive influence towards innovation capability. The results also find out that that the effective knowledge sharing is in the form of informal situation, particularly one facilitated by community practice in the firm. Also, the existence of enterprise knowledge portal enables employees to access the document and knowledge they need.

1. Introduction

Nowadays, an attempt to improve innovation capability is becoming a focus in firm management [1, 2]. Innovation capability will be acquired in a firm with a high level of creativity [3]. Researchers state that activities of knowledge sharing is proven to be effective to improve employees creativity [4], since knowledge sharing can stimulate the employees to think critically so that they can finally create new knowledge useful for the firm [5].

Innovation capability is defined as 1) capacity to develop new products which meet the market needs; 2) capacity to implement technology in accordance with creating new products; 3) capacity to develop and adapt new products and technology for the better future; and 4) ability to respond quickly to the advancement of technology and utilize the market needs [6].

In the service sector, innovation can be divided into two factors comprising the ability of the firm/ individuals to create new products and the ability to reconfigure or develop the existing products either radically or incrementally [7].

Innovation capability can be measured in the level firm and individuals; however, this study focuses on the individual measurement. Individual innovation capability can be measured based on the level of the individual capability in creating new and valuable products for the firm, their capability to develop existing products, and capability to develop new and better working procedure [8].

Creativity is an ability to create new ideas, find new ways to solve problems or to create opportunities [9]. Also, it can also be defined as an ability to create valuable and useful ideas related to the



development of new products, improvements of existing products and improvement of procedures or work processes [10].

In general, knowledge is classified into two categories; tacit and explicit knowledge [11]. In companies, knowledge sharing behavior can be defined as a voluntary interaction among humans in a firm or among firms, conducted in an institutional framework which has laws, ethical norms, and other behaviors related to knowledge [12]. Therefore, it is considered someone's level of intensity in tacit and explicit knowledge sharing with their workmates in their firm or others' firm.

There have been several studies investigating the relationship between creativity and innovation capability [13-15]. Some of them even study the relationship between knowledge sharing behavior and innovation capability [16-18]. This study aims to examine the effect of knowledge sharing behavior on innovation capability by placing creativity as a variable mediating both relationships.

2. Methodology

This study uses quantitative and qualitative analyses whose problem statements are causal effectual. Participants in this study are employees in a telecommunication firm in Indonesia.

Quantitative data are collected through an interval scale questionnaire distributed to 145 respondents. Sampling technique is conducted using probability sampling with disproportionate stratified random sampling. Quantitative data analysis in this study employs Structural Equation Modeling (SEM) using a software namely LISREL 9.2. The quantitative data are then verified using a qualitative approach from the results of interview and Focus Group Discussion (FGD).

3. Results and discussion

About structural model test in SEM, there is no simple rule to evaluate whether a model is good or not towards several testing situations. However, there are several types of measurement researchers can implement to test the fitting level of a model; one of which is using absolute fit measures and incremental fit measures [19]. Table 1 presents the results of the goodness of structural fit model measures based on Goodness of Fit Statistics indicators.

Table 1. Goodness of fit statistics.

Goodness of Fit Statistics	Score of Evaluation	Recommended Score
Absolute Indices		
Goodness of Fit Index (GFI)	0.93	> 0.90
Root Mean Square Error of approximation (RMSEA)	0.049	< 0.05 (close fit) < 0.08 (good fit)
Incremental Indices		
Comparative Fit Index (CFI)	0.94	> 0.90
Incremental Fit Index (IFI)	0.94	> 0.90

Table 1 showed that the model is "fit" since it meets the recommended standards.

The relationship between variables is considered significantly positive when the t_{cal} is higher than the t_{tab} [20]. For 145 sample size with level of significance of 0.05, the t_{tab} is 1.66. The interpretation is presented in Table 2.

Table 2. Interpretation of statistical computation.

Variable Relationship		R²	t	Interpretation
From	to			
Knowledge Sharing Behavior	Creativity	0.39	4.91	Significantly positive
Knowledge Sharing Behavior	Innovation Capability	0.29	3.11	Significantly positive
Creativity	Innovation Capability	0.36	3.55	Significantly positive

The value of R^2 in Table 2, informs the ability of independent variables to shape the dependent ones. The results of the statistical computation show that knowledge sharing behavior has a significant positive influence towards creativity, knowledge sharing behavior is positively influential to innovation capability, and creativity has significant positive influence towards innovation capability. To explain how knowledge sharing behavior, creativity, and innovation capability are related to each other, this paper administers a qualitative analysis referring to data from interview and focus group discussion.

About product innovation capability, employees in the Directorate of Customer Marketing said that the high intensity of idea and experience exchange leads to the rising understanding of the products. This encourages them to have the inspiration to give feedback on either improvement of the existing products or creating new ones (for instance, making a scenario of how to reach new market target through a promotional tariff program or development of new feature using short messaging services).

Regarding process innovation capability, employees in the Directorate of Network Services delivered that the high intensity of expertise exchange among workmates, for instance through teamwork or internship, they often attain new technical expertise to apply a new software or a new technology. Thus, this fact leads them to apply new expertise in finishing their job.

Employees in the Directorate of Corporate Services stated that the high intensity of idea and experience exchange with workmates leads them to acquire information on how their peers work. This encourages them to get inspired by how their mates work. Further, this leads them to think of better ways to work and implement the better work in their job. They even say that this usually reduces overlapped or ineffective works so that they can finish their job faster and easier.

Also, employees in the Directorate of Finance admitted that the high intensity of document and report exchange with their workmates leads them to a better understanding of how to work effectively. And this also encourages them to work better and finish their job more effectively.

Based on the results of the interview, it can be concluded that knowledge sharing behavior is influential towards innovation capability through creativity improvement. Figure 1 explains the relationship among knowledge sharing behavior, creativity, and innovation capability.

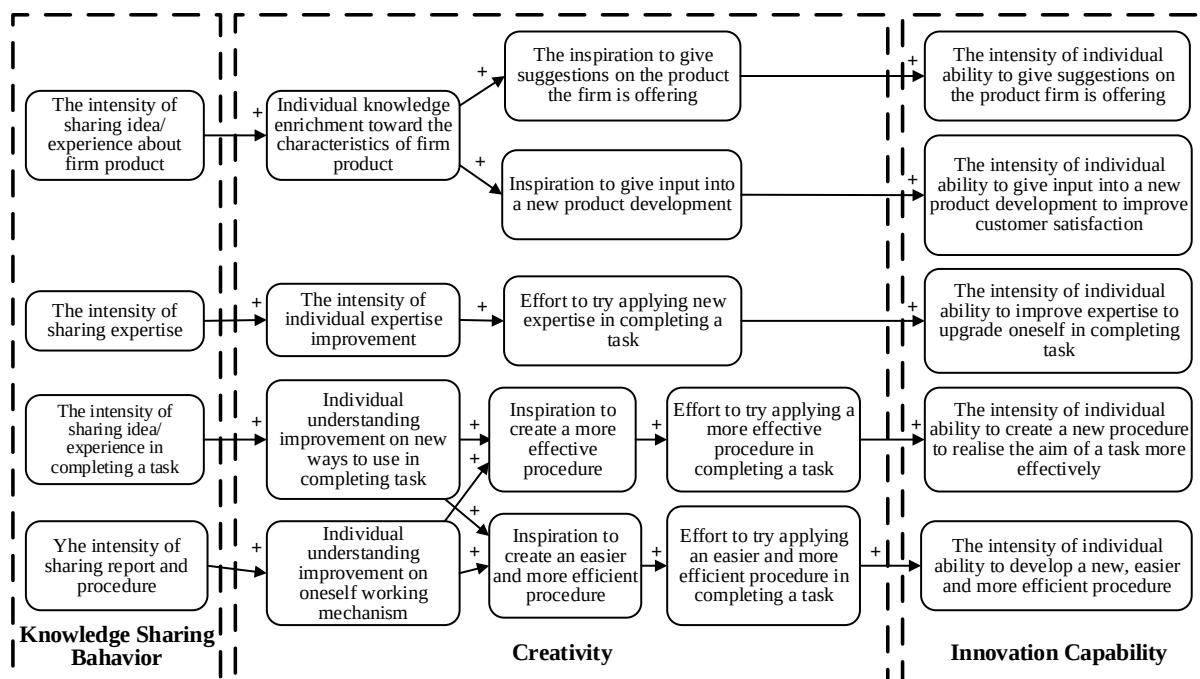


Figure 1. Relationship among knowledge sharing behavior, creativity and innovation capability.

The results of focus group discussion show that knowledge sharing behavior is the most effective way in encouraging the improvement innovation capability is done in an informal atmosphere. Interviewed respondents in this study state that they prefer knowledge sharing activities in informal situations since it is more “liquid” (have a higher level of intimacy) so that they feel the openness in the forum to share ideas and experiences among each other. Thus, the existence of community practice in the firm is considered important as well as effective to grow knowledge sharing behavior.

Moreover, it has been found that tacit knowledge sharing activities are more frequently conducted in direct meetings, while explicit knowledge sharing activities usually involve IT facilities of the firm. In this relation, the existence of enterprise knowledge portal is a solution for the employees to document and access the knowledge they need.

Results of this study prove that job characteristics affect knowledge sharing behavior. As an illustration, employees in the Directorate of Corporate Strategies and Business Development has the highest intensity of knowledge sharing since, based on the results of focus group discussion, the employees in that directorate need more coordination with employees from other directorates in finishing their job.

In addition to the fact mentioned above, the study also finds out that innovation capability acquired from knowledge sharing behavior is influenced by the characteristics of the employees’ work. The results of this study show that knowledge sharing activities tend to encourage process innovation capability. This is because not every employee is related to product making so that the innovation capability focuses more on a process.

4. Conclusions

The results of this study indicate that knowledge sharing behavior has a significant positive influence towards creativity and that creativity has a significant positive impact towards innovation capability. This study also proves that knowledge sharing behavior can improve innovation capability through creativity.

Furthermore, it has been found that knowledge sharing activities in informal situations are more effective, particularly those facilitated by the community of practice in the firm. Besides, the existence

of enterprise knowledge portal is also important and useful to facilitated employees in documenting and accessing the required knowledge.

This study also proves that job characteristics influence knowledge sharing behavior. For instance, the higher the coordination level is needed, the higher the knowledge sharing activities will take place. Therefore, teamwork will lead to knowledge sharing activities among employees. Also, based on the results of this study, it is believed that innovation varies based on how each employee works.

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