

## **The Role Formal Mechanism on Knowledge Sharing and Innovation Capability Development Process**

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### **Abstract**

This research investigated the influences between knowledge sharing capability, absorptive capacity, formal mechanism and innovation capability. This research proposed four hypotheses by processing on 107 data respondents of broadcast industry in Barlingmascakeb region. Data was analyzed by smart PLS 2.0 software. Based on the results, this research found that knowledge sharing capability significantly influenced potential absorptive capacity and the company's ability to acquire and assimilate knowledge has a positive influence towards the company's ability to transform and to exploit knowledge, the relationship between potential absorptive capacity and realized absorptive capacity was not moderated by formal mechanism and realized absorptive capacity significantly influenced innovation capability, especially process innovation.

**Keywords:** Knowledge sharing, absorptive capacity, formal mechanism, innovation capability,

## 1. Introduction

Globalization made every companies in the tight competition. Under these conditions, only company which can created competitive advantage that able to compete. There were many ways for companies to achieve competitive advantage, but the most important aspects needed in dynamic competitive environment was the company's success in creating innovation (Barney, 1991).

Liao et al., (2006) stated that knowledge is the most important sources for companies to create long-term benefits, learning new techniques, solving problems, creating core competencies and establish a new situation. While Reid (2003) states that the process of knowledge sharing create an opportunity for companies to maximize efficiency, solutions and requirements needed in generating competitive advantage.

Recent study, Luciana et al., (2008) stated there is relationship between the factors that the key of success in creating a competitive advantage for companies. They claimed the two findings that the knowledge sharing capabilities significantly influence the company's ability to acquire and assimilate the knowledge that further significant effect on the ability to transform and exploit knowledge has proven positive effects on innovation, especially process innovation.

Previous research that formed the basis of this research adopted by Luciana et al., (2008), entitled the relationship between knowledge sharing capability, absorptive capacity and formal mechanisms: a case study of information and communication technology industry in Indonesia, and knowledge sharing capability, absorptive capacity, and innovation: an empirical study of Indonesia's information and communication technology industries. The aimed of this study is to examine innovation capability through knowledge sharing capability process in the broadcast industry. The specific objectives of the study are: First, determine the influence between Knowledge Sharing (knowledge donating and knowledge collecting) and Potential Absorptive Capacity (PAC). Second determine the influence between Potential Absorptive Capacity and Realized Absorptive Capacity (RAC). Third, determine the relationship between Potential Absorptive Capacity (PAC) and Realized Absorptive Capacity (RAC) is moderated by formal mechanism. Fourth, determine the influence between Realized Absorptive Capacity (RAC) and Innovation Capability.

## 2. Literature Review and Hypotheses

### Knowledge Sharing Capability

Nonaka and Takeuchi (1995) states that the knowledge generated by the interaction of tacit knowledge and explicit knowledge. Meanwhile, Holtshouse (1998) states that knowledge is a current that can exchange knowledge both the sender (supplier) and receiver (demanders) knowledge. Relationship importance of knowledge to the organization stated by Davenport and Prusak (2000), they state that there is link between knowledge and create a sustainable advantage for the company. Along with this research, Morling and Yakhlef (1999) also determined that the company's success is the company's ability to manage knowledge assets. Companies can't create knowledge without action and interaction of its employees. This importance of the conduct of their employees perform knowledge sharing.

Hooff and Ridder (2004) defines that individual's knowledge sharing is the process of mutual exchange of knowledge (tacit knowledge and explicit knowledge). Based on this definition, there is the implication that behavior consists of bringing (knowledge donating) and getting (collecting knowledge). Understanding the behavior of communicating knowledge donating is intellectual capital owned by a person to another. While collecting the knowledge of individuals behavior to consult with other individuals on the intellectual capital owned. Both these behaviors have different ways and can give different effects. In another study, Hooff and Weenen (2004) defined knowledge sharing as activities of the individual's personal intellectual capital exchange.

### **Absorptive Capacity**

The concept of absorptive capacity was first introduced by Cohen and Levinthal (1990), they defined company's ability to identify, assimilate, and exploit knowledge. Other studies conducted review of existing concepts to tested the company's capacity to used and exploit the knowledge already available previous (Minbaeva et al., 2003). They identify the skills and motivation of employees is an important aspect in the absorptive capacity of the company. Whereas Zahra and George (2002) defined the concept of absorptive capacity, includes two, namely: potential absorptive capacity consists of ability to acquire and to assimilate, realized absorptive capacity consists of ability to transform and to exploit knowledge.

In further research, Zahra and George (2002) criticized that the precise for the company to measure the level of absorptive capacity to judge or view of the total spending or technical personnel in the department of research and development (RnD) because the data in his research ignores the role of personnel department. This is done, since the employees are the users of knowledge for knowledge utilization in organizations is very important for employees. Companies might be able to acquire and assimilate knowledge, but do not have the capacity to transform and exploit it to generate profits. In further research, they emphasize that the ability of absorptive capacity should be owned by employees and ignore testing whether employees have motivation to commit to the job commitment is key to success for the company. This research used the concept of absorptive capacity suggested by Zahra and George (2002).

### **Formal Mechanisms**

The concept of a formal mechanism is an adaptation of the concept of social integration mechanism proposed by Zahra and George (2002). This concept is a formal structure that facilitates the identification and dissemination of information within the company. Activities facilitated by formal mechanisms, including research and development program activities and the activities of human resource management.

According to Cohen and Levinthal (1990), research and development program of the company have two very important functions to produced new knowledge and to contributed the company's ability to absorb knowledge. Other empirical results indicated that human resource management activities has positive influence on the development of absorptive capacity (Minbaeva et al., 2003).

### **Innovation Capability**

According to West and Farr (1990), innovation was defined as one new thing introduced and an application which includes ideas, processes, products or new rules that come from individuals, groups or organizations that are relevant to be adopted in order to provide a significant advantage. Innovation was divided into two types, process innovation and product innovation. (Walker et al., 2002) .Consistent with the objectives of the study, four hypotheses were developed for testing:

Hypothesis 1: The employees' ability to perform knowledge donating and knowledge collecting (knowledge sharing capability) with other employees has a positive influence on the company's ability to develop its potential absorptive capacity (PAC).

Hypothesis 2: The company's ability to acquire and assimilate knowledge (potential absorptive capacity-PAC) has a positive influence on the company's ability to transform and exploit knowledge (realized absorptive capacity - RAC).

Hypothesis 3: The company's ability to acquire and assimilate knowledge (potential absorptive capacity-PAC) on the company's ability to transform and exploit knowledge (realized absorptive capacity - RAC) is moderated by formal mechanism.

Hypothesis 4: Realized absorptive capacity (RAC) has a positive influence to create competitive advantage on innovation capability (product and process). Research model is shown at Figure 1.

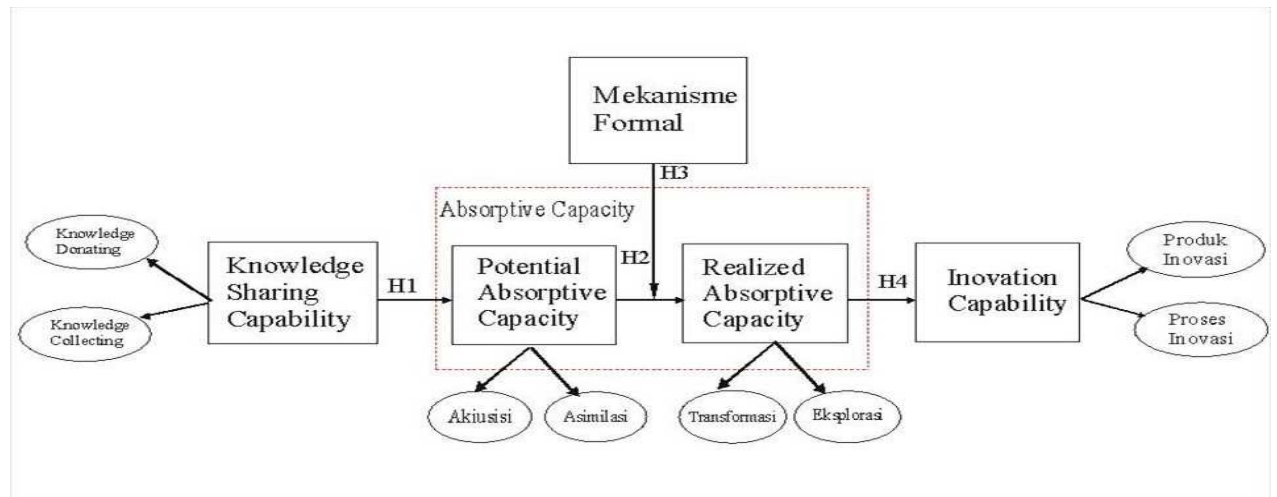


Figure 1. Research Model (Adopted from Luciana., et al., 2008)

### 3. Research Design

Research using quantitative approach and confirmatory research and cross sectional. Data was collected by questionnaire which used six point scale. Hypotheses in this study will be tested using SEM with analytical tools Smart PLS (Partial Least Square) 2.0. The sample of this study was taken from 26 radio stations of broadcast industry in Barlingmascakeb region. Barlingmascakeb region consist of five district in central java province, Indonesia. The sample design was used non-probability sampling method on considerations (judgment). The respondents in this study were staff in the broadcast industry in Barlingmascakeb region categorized as knowledge workers. The ideal is that if any statement related the work environment is answered by individuals who work at job site and every companies can be represented by some respondents to be able to approach the real conditions in their respective working environment. Each company was represented by five samples. This consideration was based on the recommendation from HRD or broadcast managers. They were from staff in broadcast department.

### 4. Findings and Discussion

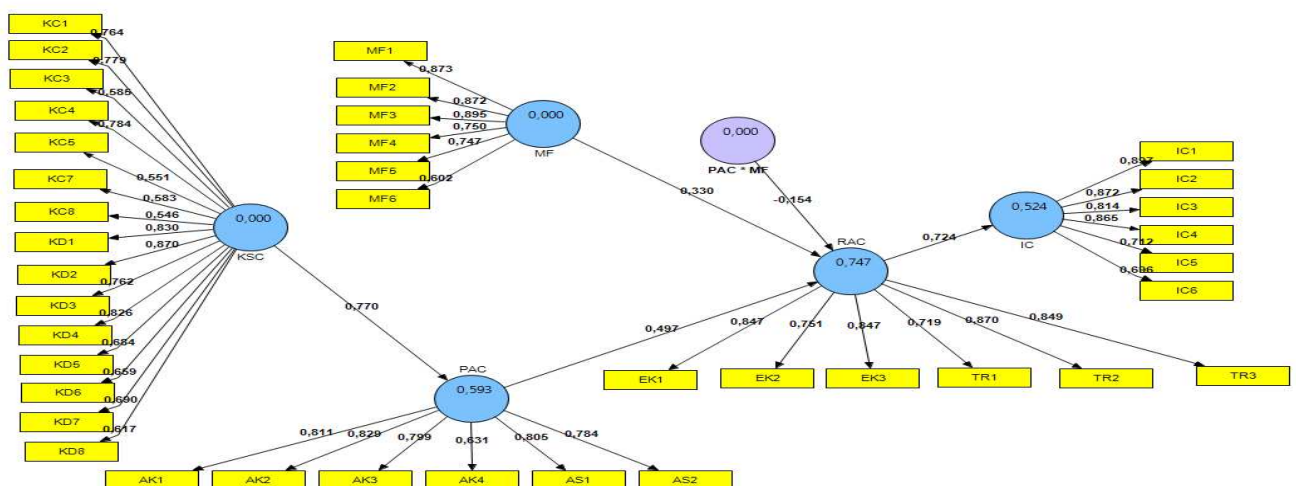


Figure 2. Outer loading after Reestimate

In this study, the questions (items) criteria were valid and can be used for computation in statistical analyzing if every construct score's higher than 0,5. Based on the results, the loading indicator score less than 0,5 and should be removed from the model were KC6 with loading's score 0,496 and 0,474 for AS3.

**Table 1.** AVE and AVE Square Roots

Construct	AVE	Akar AVE
KSC	0,503970	0,709908
PAC	0,607373	0,779341
PAC*MF	0,753302	0,867929
RAC	0,665418	0,815731
MF	0,634359	0,796466
IC	0,661121	0,813093

**Table 2.** Construct Correlations

Construct	IC	KSC	MF	PAC	PAC*MF	RAC
IC	0,813093					
KSC	0,687614	0,709908				
MF	0,667250	0,596163	0,796466			
PAC	0,722538	0,770200	0,687639	0,779341		
PAC*MF	-0,529813	-0,699316	-0,436642	-0,636744	0,867929	
RAC	0,723579	0,703649	-0,436642	0,822136	-0,614931	0,815731

Based on table 2 and 3 above, knowledge sharing capability, potential absorptive capacity, formal mechanism, interaction variable and innovation capability have good discriminant validity. Meanwhile, value of construct correlation realized absorptive capacity less than potential absorptive capacity. So this construct don't have good discriminant validity enough.

**Table 3.** Cronbachs Alpha, Composite Reliability and R Square

Construct	Composite Reliability	Cronbachs Alpha	Information	R Square
KSC	0,937138	0,931761	Reliable	
PAC	0,902098	0,868641	Reliable	0,593208
PAC*MF	0,990922	0,990434	Reliable	
RAC	0,922330	0,898590	Reliable	0,747346
MF	0,910999	0,885360	Reliable	
IC	0,920609	0,897161	Reliable	0,523567

Table 3 showed that all constructs are reliable. Knowledge Sharing Capability influence of Potential absorptive capacity R2 value of 0.593208 can be interpreted that the variability of Potential absorptive capacity can be explained by the variability of Knowledge Sharing Capability by 59.3% while 40.7% explained by other variables. Potential impact Realized absorptive capacity of the absorptive capacity of R 2 value of 0.747346 can be interpreted that the variability construct Realized absorptive capacity which can be explained by the variability of Potential absorptive capacity construct, Mechanism of Interaction of Formal and Variable 74.7% while 25.3 % explained by other variables. Realized absorptive capacity model of the influence of the Innovation Capability R 2 value of 0.523567 which can be interpreted that the variability of Innovation Capability which can be explained by the variability of construct Realized absorptive capacity of 52.4% while 47.6% explained by other variables.

**Table 4.** Path Coefficient

Hypotheses	Correlation of Other Variables	Original Sample (O)	T-statistic.	P-value	Results
H1	KSC -> PAC	0,770200	11,887374	1.8477E-21	Supported
H2	PAC -> RAC	0,496922	3,962959	6.76247E-05	Supported
H3	PAC * MF -> RAC	-0,154466	1,187230	0.118907941	Not Supported
H4	RAC -> IC	0,723579	10,244924	8.63581E-18	Supported

Based on the table 4, the value of original sample showed a positive or negative variable relationships. However the T-statistic is used as the basis for calculating P-value. P-value is used to tested the hypotheses in this study with a significant level or alpha ( $\alpha$ ) 5%. Ha supported and H0 not supported, If the P-value <alpha and H0 not supported and Ha supported if P-value>alpha.

The best explanation that can be given to hypothesis 3 is the radio broadcasting industries in Barlingmascakeb region have different ways of doing research and development and human resources activities. Some radio stations have done in the form of survey research in the field. However, because this research required relatively large fund, so further research will be done by third parties such as sponsor.

In an effort to develop human resource activities, radio companies generally provided personal training for their employees, especially in broadcast department in early years. After that, development skill activities depend on every employees, especially for broadcasters, they improved their skills in the world of broadcasting from the number of hours of work and processes in the workplace directly. However, it is possible for companies to participate in seminars, training workshops in accordance with the provisions of company management. Meanwhile, for companies in the broadcasting industry in Barlingmascakeb region, ideas or creative ideas can be applied to product development and that's not because of work rotation in the company.

## 5. Implication

An effort in improving the competitive advantage of company, the management should pay attention to policies related to knowledge management, especially in the ability to do knowledge collecting. Efforts can be done in the form of facilitating employees in the same department or discussion forum and increase the intensity of a formal meeting. Companies should be able to maintain its ability to acquire and assimilate knowledge (PAC) and to transform and exploit knowledge (RAC) consistently. In an effort to create the innovation process, companies should give more attention to its ability to transform and exploit knowledge (RAC), because this contributes significantly. Efforts that can be done in the creation of the innovation process, companies should increase the use of technology in both the administrative process or production.

## 6. Conclusions

The results of this study showed that the ability of radio company in conducting knowledge donating and collecting (Knowledge Sharing Capability) significantly affect the company's capability to acquire and to assimilate knowledge (potential absorptive capacity), potential absorptive capacity significantly affect the company's capability to transform and to exploit knowledge (realized absorptive capacity), and realized absorptive capacity (RAC) significantly affect the company's ability to generate competitive advantage through the Innovation Capability (IC). Therefore, it can be concluded that there is the role of knowledge sharing on innovation capability in the radio company in the Barlingmascakeb area.

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