The Effect of Knowledge Sharing and Supply Chain Management on Opportunity Recognition through Management Skill in the Food Industry of SMEs

Ratih Indriyani¹, Anis Eliyana², Achmad Sobirin³, Steven Nathanael⁴

¹ Universitas Airlangga, Indonesia
² Universitas Islam Indonesia
³ Universitas Kristen Petra

Corresponding author: †ratih.indriyani-13@feb.unair.ac.id, ranytaa@petra.ac.id
² anis.eliyana@feb.unair.ac.id
³ achmad.sobirin@ui.ac.id
⁴ snathanael35@yahoo.com

Abstract—The ability to manage and understand opportunities for business development is necessarily important for the operators of the food industry, supported by knowledge sharing activities between the managers and employees and supply chain management. This study aimed to determine the effect of knowledge sharing and supply chain management on opportunity recognition skill through management skill in the food industry in Surabaya. This study involved 100 food business owners and managers in Surabaya as the research samples. This study was conducted by examining the knowledge sharing, opportunity recognition skill, and management skill, and the data obtained were analyzed using PLS. As a result, knowledge sharing was found to have a significant effect on opportunity recognition skill through management skill.

Keywords: Knowledge sharing, Supply chain management, Opportunity recognition, Management skill

1. Background

The rapid growth of the food and beverage industry in Indonesia apparently proceeds up to the next 5-10 years in which more than 10 per cent is likely to be achievable every year. The purchasing index, furthermore, has shown the increasing trend every month. The growth of Indonesia's food and beverage industry reached 8% in 2012 and 13% in 2013. Further, 391 places for the meal were available and yet increased to be 790 in 2016 in Surabaya. Hence, such fact shows that Indonesian people have a high enthusiasm for the food industry. Thus it turns out to be an auspicious business.

The food industry has significantly evolved, which leads to a high level of competition. According to Panca (2017), 15-20% growth of the food and beverage industry was recorded in May 2017 in East Java. Meanwhile, the other industries declined at the same time. Hence, it indicates the emergence of great challenges that encourage business owners to actively observe business development and carefully realize the business opportunities for the sake of business accountability in the market. In business management, recognizing opportunities is crucial intelligence. Not only the quality of the initial idea when starting the business, but also the ability to understand the situation when the opportunity appears will make the business run successfully [1]. Through this time, the potential benefits are likely to be achievable [2]. For example, the owners of Small Medium Enterprises (SMEs) are encouraged to respond or meet the market's needs in which it refers to linking their products with the existing demand in order to take advantage of the available opportunities [3]. Therefore, a business can survive in the intense competition among other businesses.

The success factor of doing business in the food industry is mainly derived from the business manager. In other words, making a success of doing business should be realized that management skills are truly necessary [4] including the skills to recognize market circumstances and of how to reach any possible opportunities. These skills are related to their individual perceptions and self-assessment in terms of values, abilities, interests, and goals [5]. Further, the skill of business management has a major impact on business continuity. In the food industry, for example, night culinary business is one of the various current innovations. However, certain skills are necessary to manage the restaurant, ranging from the operating system until the attractive efforts for customers, either technically or managerially. With regard to maintaining the consistency and sustainability of management, therefore, communication and knowledge sharing are significantly needed between employees and managers in the organization.

Knowledge sharing plays a significant role in business development, and it is formed when personal knowledge
turns into general knowledge. According to [12], knowledge sharing provides the information of task and knowledge to help to collaborate with others in terms of problem-solving, new ideas development, and policies or procedures implemented in the organization. In addition, knowledge sharing shows the exchange of knowledge between two individuals, one is communicating the knowledge, and the other one is listening to it for understanding [6]. In the management of the food industry, knowledge sharing is implemented by sharing information between managers and employees for the sake of running the business well.

Knowledge sharing in SMEs organization is mostly tacit. In fact, business owners did not have sufficient detailed documentation on their management activities. Further, the owners of SMEs usually involve their family members with the respect that knowledge and information sharing from one person to another becomes easier. In spite of that, knowledge sharing enables them to get ready to look at new possible opportunities for business development, such as providing various innovations of new products to meet customer needs.

In the recent era Enterprise Resource Planning has become the need of every organization. Organizations apply ERP to smooth its operations. Supply chain management system (Information Sharing) is also an essential and key section of ERP. The success or failure of any organization ERP in many ways depends upon Supply chain management system (Information Sharing) [7]. A strong Supply chain management system (Information Sharing) makes enable employees to understand and respond the ERP. Many of the times employees hesitate to accept ERP and prefers to quite. Supply chain management system (Information Sharing) is basically the organization system to share its information within and outside the organization.

With regard to the above explanations and the prior research, this study will examine the effect of knowledge sharing on management skill and opportunity recognition in the food industry in Surabaya. Further, the current study also wants to examine the effect of management skills of business managers toward business opportunity recognition in SMEs, particularly working in the food industry in Surabaya.

2. Hypotheses development

This section provides the literature about understudy variables and their relationship and based on these literature, this study developed the hypotheses are mentioned in the section.

2.1 Knowledge sharing

According to [4], knowledge sharing is one step in knowledge management that provides opportunities for group members, organizations, or companies to share knowledge, techniques, experiences, and ideas that other members must-have. Knowledge sharing is the most important process in knowledge management, and it is likely to be achievable when everyone has equal opportunities to express opinions and ideas for other members of the organization. It ensures that knowledge is stored and maintained within the business. Further, knowledge can be disseminated and continued to others in an ongoing time of the business. Managers and employees can share the knowledge in a written type and through interactions that occur within the organization. Knowledge sharing can be measured through written contribution, organizational communication, and personal interaction [8], and those involved in the business practice will also have intensive knowledge sharing behaviors.

2.2 Management skill

The skill in business management is truly important for leaders and can ultimately affect organizational performance [9]. According to Sambasivan, Abdul [2], management skill is defined as the knowledge and the ability of an entrepreneur in business management, and it could be either general skill or a specific skill. General management skill consists of the decision-making ability, conceptualization ability, effective information processing ability, leadership skills, presentation skills, the use of diagnostic concepts, and the use of strengths. Meanwhile, specific skill includes technical skill and industrial skill. A number of researchers explain that management skills can be obtained by everyone, and the personal quality is necessary to have a strong influence on management skills. In addition, Managers have certain work responsibility and characteristics, and the management skills needed in the organization are perceptual skill, human skill, and operational skill.

2.3 Opportunity recognition

Opportunity is explained as the condition that forms an inspiration to be able to produce profits which was not previously exploited by oneself or others. Besides, opportunity recognition is defined as a process where particular new business ideas that are potentially profitable can be identified [10]. A business opportunity can be described as the introduction of opportunities or the discovery of opportunities that refer to the three processes for starting innovative businesses to introduce something new to the market.

According to [11], opportunity recognition explains how individuals, in the context of companies and business organizations, come to identify new possible opportunities. Based on the prior knowledge, past experiences and current market circumstances, further, some individuals will recognize new businesses with the potentials of benefit for the company. Thus, the vigilance of opportunities arising in the market should always be maintained by the business itself.
2.4 Supply chain management system

Supply chain management system (Information Sharing) is basically an information-sharing system. This information sharing can place within or outside the organization. Opportunity is explained as the condition that forms an inspiration to be able to produce. In the past, the organizations did not keenly focus on the supply chain management system (information sharing), but now with the passage of time, its importance has realized by the world [12, 13]. In the past, the information's sharing takes a long tome time, but now the supply chain management system (information sharing) has made it possible to share the information with minimal times. In the modern world, the importance of supply chain management system (information sharing) can't be ignored [7, 14]. In the research literature, it is recorded with different titles. Sometimes it is titled as information supply chain and another hand it is also supply chain (information flow) management system. The ultimate purpose of this system is to maintain the accuracy and secrecy of the organization information [15, 16]. Organizations linked with its stakeholders vide supply chain management system (information sharing) whether they are near or far [17]. Since the world has become a global village, it enhances the supply chain management system (information sharing) demand. Supply chain management system (information sharing) is basically the organization way to share, save and maintain its information within and outside the organization [18].

2.5 Knowledge sharing and management skill

Knowledge sharing is highly important for the success of management so that the entrepreneur must have adequate knowledge for coordinating the business. Knowledge is not merely sought and identified but also stored and utilized by people in organizations. How knowledge is created and shared is an important behavior in business to improve the skills in operations and employee management. Through knowledge sharing, knowledge is transferred for the sake of business management [19]. The sharing activities are carried out between the manager and other parts of the organization whose knowledge, skill and experience are needed to mutually strengthen others' management skill. If this knowledge sharing behavior is well conveyed to everyone, it then will provide other individuals with the ability to work in the organization.

H1: Knowledge sharing has a significant influence on management skill.

2.6 Management skill and opportunity recognition

Recognizing opportunity is not simply knowing the opportunity, but also exploring them. This requires managerial skills among business leaders [2]. Skill improvement is certainly necessary to be able to effectively recognize the opportunities for developing businesses. When the managers realize the importance of product development, hence, the consumer's needs should be the main concern. [20], the role of management capabilities can significantly influence the quality of an organization's strategy for identifying new opportunities. In the current research, management skills are explained through the development of new products/services, leadership skills, market development, customer improvement, and identification of appropriate strategies. As a result, those skills encourage opportunity recognition.

H2: Management skill has a significant influence on opportunity recognition.

2.7 Knowledge sharing and opportunity recognition

The personality traits of entrepreneurs, social networks, and knowledge sharing are considered to play a great role in improving sensitivity toward business opportunities. Entrepreneurs must be vigilant to recognize the opportunities, take steps to develop the business and evaluate these possibilities [21]. Entrepreneurs find opportunities related to the information they already have since knowledge sharing enables them to obtain new information and strategy. Besides, business requires an ability to recognize the opportunities accompanied by the appropriate actions, and knowledge sharing can synergize the information and intuition of business owners and managers involved in management activities. When business managers renew and share the knowledge to be able to increase understanding of the business, thus, they will be able to recognize the opportunities for business development in the future.

H3: Knowledge sharing has a significant influence on opportunity recognition.

2.8 Supply chain management system and management skill

The importance of supply chain management system (information sharing) is an important factor in an organization to float its information [7]. The supply chain management system (information sharing) also help the employees to enhance their skills—the world with the passage of time, introducing new ways for information transfer. The organization time to time facilitates its employees to learn these required skills. Many of the times, the organization provide arrange special events for its employees so that they may able to handle this organizational information flow system in a better manner [22].

The existence of modern supply chain management system (information sharing) is not enough if the management has no skills to handle it. The organization in this way help out the employees to enhance their skills to
compete in the market. Literature witnessed that supply chain management system (information sharing) has positive nexus with management skills [23].

**H4:** Supply chain management system has a significant influence on management skills.

### 2.9 Supply chain management system and opportunity recognition

As the organizations put dawn to dusk efforts in order to achieve the competitive edge in the market, Organization use as many ways to be updated with its competitor supply chain management system (information sharing) to compete it in the competition [24]. Recognition of the opportunity play a vital role in organizational success. A strong supply chain management system (information sharing) helps the organization to sort out the opportunity exists. Many of the times, the existing information of the competitor opens new horizons [25].

The organization will have to on time, recognize this available opportunity in order to grab it on time. A powerful supply chain management system (information sharing) will scrutinize and help the organization for better understanding of the available opportunity [26, 27]. So if the organization has updated the supply chain management system (information sharing), it will enhance the organizational capacity to realize the available opportunity.

**H5:** Supply chain management system has a significant influence on opportunity recognition

### 3. Methodology

This study took the form of quantitative causal research method to examine the causal relationships between two or more variables. A quantitative approach was applied to research through statistical data collection and data analysis. It attempts to get the results of the generalization of the test and determine the effect of the independent variable (knowledge sharing). The effect of independent variables toward the dependent variables will be tested. In this study, the dependent variables are opportunity recognition and management skill as the intervening variables. The research began by distributing questionnaires to 100 entrepreneurs in the food industries that had been established at least for one year in Surabaya. The questionnaire with 26 items measured three variables from the research. It was distributed during the working hour to all business owners who were actively involved in the business. Structured questions in the questionnaire were multiple-choice or a five-point Likert scale. A five-point Likert scale is a measuring tool with the values ranged from one to five in the questionnaire to obtain the data and interpret the respondents' answers [11].

This study employed Smart Partial Least Square (PLS 3), which enabled the resolution of research problems to be processed properly. Several tests were used in the study, such as the outer model test, the inner model test, and hypothesis testing. The components of the outer model test are convergent validity, composite reliability, discriminant validity, and the value of the average variance extracted (AVE). The variables that are used in the study such as knowledge sharing (KS) have twelve items, supply chain management (SCM) has ten items, management skill has seven items and opportunity recognition (OR) has five items. These variables are shown in Figure 1.

![Figure 1. Theoretical framework](image)

### 4. Results

The findings exposed the firstly the convergent validity and the figures indicated that valid convergent validity because the values of loadings and AVE are not smaller than 0.50 and the values of Alpha and CR are not lower than 0.70. These statistics are shown in Table 1.

<table>
<thead>
<tr>
<th>Items</th>
<th>Loadings</th>
<th>Alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS1</td>
<td>0.721</td>
<td>0.913</td>
<td>0.926</td>
<td>0.533</td>
</tr>
<tr>
<td>KS11</td>
<td>0.664</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS12</td>
<td>0.673</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS2</td>
<td>0.746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS3</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS4</td>
<td>0.767</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS5</td>
<td>0.774</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS6</td>
<td>0.718</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS7</td>
<td>0.752</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS8</td>
<td>0.743</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KS9</td>
<td>0.724</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS1</td>
<td>0.898</td>
<td>0.878</td>
<td>0.909</td>
<td>0.626</td>
</tr>
<tr>
<td>MS2</td>
<td>0.849</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS3</td>
<td>0.721</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS4</td>
<td>0.670</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS5</td>
<td>0.748</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results also exposed secondly the discriminant validity and the figures indicated that valid discriminant validity because the values of Heterotrait Monotrait ratios are not bigger than 0.85 that show no high correlation among the predictors. These statistics are shown in Table 2.

Table 2. Heterotrait Monotrait ratio

<table>
<thead>
<tr>
<th></th>
<th>KS</th>
<th>MS</th>
<th>OR</th>
<th>SCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS</td>
<td>0.570</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td></td>
<td>0.715</td>
<td>0.762</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td>0.715</td>
<td>0.762</td>
<td>0.734</td>
<td></td>
</tr>
<tr>
<td>SCM</td>
<td>0.599</td>
<td>0.706</td>
<td>0.734</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Measurement model assessment

The path analysis indicated that knowledge sharing has positive association with management skill and opportunity recognition and accept H1 and H2. Moreover, the management skill has also positive nexus with opportunity recognition and accept H3. In addition, supply chain management has positive association with management skill and opportunity recognition and accept H4 and H5. These are shown in Table 3.

Table 3. Path analysis

<table>
<thead>
<tr>
<th>Relationships</th>
<th>Beta</th>
<th>S.D.</th>
<th>t-statistics</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS -&gt; MS</td>
<td>0.219</td>
<td>0.050</td>
<td>4.361</td>
<td>0.000</td>
</tr>
<tr>
<td>KS -&gt; OR</td>
<td>0.312</td>
<td>0.043</td>
<td>7.233</td>
<td>0.000</td>
</tr>
<tr>
<td>MS -&gt; OR</td>
<td>0.293</td>
<td>0.048</td>
<td>6.116</td>
<td>0.000</td>
</tr>
<tr>
<td>SCM -&gt; MS</td>
<td>0.546</td>
<td>0.045</td>
<td>12.165</td>
<td>0.000</td>
</tr>
<tr>
<td>SCM -&gt; OR</td>
<td>0.284</td>
<td>0.052</td>
<td>5.475</td>
<td>0.000</td>
</tr>
<tr>
<td>MS -&gt; OR</td>
<td>0.064</td>
<td>0.014</td>
<td>4.426</td>
<td>0.000</td>
</tr>
<tr>
<td>SCM -&gt; MS -&gt; OR</td>
<td>0.160</td>
<td>0.035</td>
<td>4.583</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Figure 3. Structural model model assessment

The results showed that knowledge sharing has a significant positive effect on management skill. This shows that the increasing process of knowledge sharing will make the management skill better. The results also confirm that the supply chain management system (information sharing) has a significant positive effect on management skill. The results also indicate that a strong supply chain management system (information sharing) will improve management skills.

Managers who already have sufficient knowledge in business management will be able to share their knowledge and experience with employees and colleagues, and their expertise will also be able to develop business management, especially for those related to the management activities. Knowledge sharing in an organization is conducted formally and informally. In many SMEs, there occurs a non-formal and personal communication. Through intensive and personal communication, the management skill of people who have the responsibility to manage will also develop better [28]. Through the practices in business, managers share their knowledge with employees and other parts of the organization. Thus, it will increase management capabilities, and they will be more experienced in managing the business.

Managers who already have sufficient knowledge in business management will be able to share their knowledge and experience with employees and colleagues.
with the help of supply chain management system (information sharing), and their expertise will also be able to develop business management, especially for those related to the management activities. This supply chain management system (information sharing) will act as a bridge between learners and trainers within the organization.

The results of the study, like supply chain management system (information sharing) have positive nexus with management skills and also the relationship between supply chain management system (information sharing) and opportunity recognition is reported by [1]. The results of the study are in line with the idea that knowledge sharing is an important part of management that facilitates and transfers skills to others. If knowledge sharing is well conveyed to certain parties, it will provide the ability for other individuals to work better [19].

The result shows that knowledge sharing has a significant positive effect on opportunity recognition skill, meaning that opportunity recognition skill will get better if knowledge sharing is at a higher level. Knowledge sharing is an action to provide opportunities for another member in the business, especially coworkers, to gain knowledge, techniques, experience, and ideas from the manager or owner of the venture. Knowledge sharing is a very important process for the progress or the continuity of business since the colleagues will get more knowledge from business owners who are already experienced in managing their businesses, so they can copy the strategy to run the business properly. Employees can exchange useful information to maintain business continuity, harmonize business standards, or develop the services. Interaction between individuals involved in running a business can support knowledge sharing, especially from the owner or manager to the employees or coworkers. Thus, intensive communication increases opportunities for knowledge sharing.

There are many personal interactions in SMEs, which could help the employees or coworkers to work better and more efficiently. It causes the knowledge of employees or coworkers to grow and have the ability to recognize more qualified opportunities. Knowledge sharing will improve the expertise and competency in managing a business. Entrepreneurs will find opportunities related to the information they already have [29]. They can find opportunities because knowledge sharing allows them to obtain new information and knowledge.

The result shows that management skill has a significant positive effect on opportunity recognition skill. Better management expertise will be able to produce better opportunity and capture the best skills. Management skills are the abilities needed by managers to manage their businesses better which are related to the managerial skill to make decisions, examine information effectively, and lead the business. Managers who can make decisions will be able to determine the steps to deal with or to prevent problems that occur when managing a business. Managers who have good management skills tend to be vigilant in observing the symptoms experienced when managing their business, and they can determine the right actions to take. Improved management skills will be able to increase the ability of managers and upgrade their expertise to capture existing business opportunities. Thus, their business will develop better and higher. The results of this study indicate that there is an influence between the variables being studied. Data analysis shows that knowledge sharing has a significant effect on opportunity recognition, and management skill is proven to have a significant effect on opportunity recognition skill. The results also show that knowledge sharing has a significant effect on management skill among the owners who manage food business in Surabaya. The results of the study identified that there is positive nexus between supply chain management system (information sharing) and management skills. The results also confirm that there is a positive association between the supply chain management system (information sharing) and opportunity recognition.

The weakest mean items in knowledge sharing variable are the informal interaction item and the existence of relaxed discussion among managers item. It means that each organization member can communicate in a more relaxed way. This type of interaction will encourage higher involvement and ownership, and daily coordination becomes better. Management skill variable has the weakest item in discussing decision-making ability to solve a problem. Thus, every manager can learn to make the right decision which can be applied by increasing their activity to try and provide solutions for any problems that occur. Managers can gather members and ask for their respective ideas as a solution to the problems. Entrepreneurs can also strengthen opportunity recognition by expanding their business networks. The source of the introduction of business opportunities can be from business partners, suppliers, distributors, or others. Gathering information from business friends will be useful to add references to external changes and opportunities.

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