

# Knowledge Sharing, Organizational Learning Capability, Open Innovation, and Business Performance : Evidence from Food and Beverage SMEs in Indonesia

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## ABSTRACT

The Covid 19 pandemic has made the business performance of the food and beverage industry decline. Therefore, innovation becomes very important to improve business performance. This study aims to examine the effect of knowledge sharing and organizational learning capability on open innovation and its impact on SMEs' business performance in the Context of the Food and Beverage Industry in Bogor, Indonesia. The objects in this study were employees in the food and beverage industry in Bogor. The number of questionnaires collected were 237 questionnaires. Therefore, the samples in the study were 237 Employees. The data analysis technique used is Structural Equation Modeling with the help of Amos software Version 23. The results show that knowledge sharing has a positive and significant effect on organizational learning capability, and knowledge sharing has a positive and significant effect on open innovation. Knowledge sharing and organizational learning capability have a positive and significant effect on open innovation. Knowledge sharing, organizational learning capability, and open innovation have a positive and significant impact on business performance. The results also prove that organizational learning capability and open innovation mediate the effect of knowledge sharing on SMEs' food and beverage Performance. These findings of the results have important implications in the literature about the antecedent of SMEs' performance that has not been previously tested. We suggest to the business owner in the food and beverage industry to enhance the knowledge

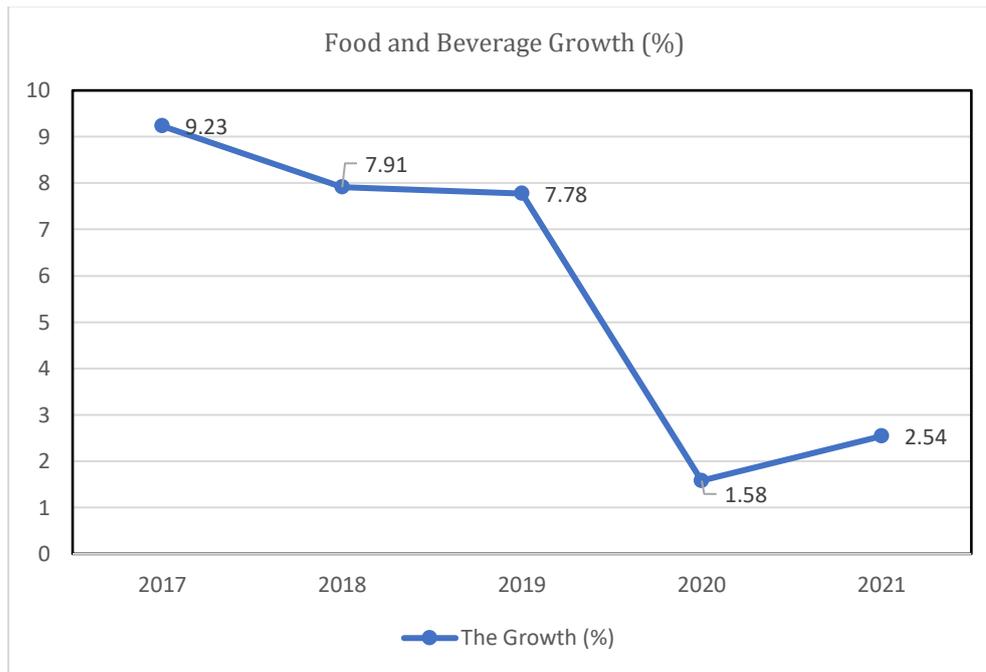
sharing practice, organizational learning capability, and open innovation to achieve good business performance. and Beverage Industry to enhance the knowledge sharing practice, organizational learning capability, and open innovation to achieve the good business performance. The results also prove that organizational learning capability and open innovation mediate the effect of knowledge sharing on SMEs' food and beverage Performance. These findings of the results have important implications in the literature about the antecedent of SMEs' performance that has not been previously tested. We suggest to the business owner in the Food and Beverage Industry to enhance the knowledge sharing practice, organizational learning capability, and open innovation to achieve good business performance

## 1. INTRODUCTION

The food and beverage industry is one of the sub-sectors of the creative industry in Indonesia. In Indonesia, SMEs have developed rapidly, especially in the food industry (Hutahayan, 2019). Small businesses significantly contribute to employment rates and economic growth (De Marco et al., 2020). The performance of the food and beverage industry sector during the Covid-19 period in Indonesia tends to decrease. Before the COVID-19 pandemic, the average growth of the food and beverage industry was > 7%. However, after the COVID-19 pandemic, the growth of the food and beverage industry was below 7% (Databoks, 2022). The growth performance of the food and beverage industry sector in Indonesia in the last five years can be seen in the graph below.

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Source: Databoks.com

Figure 1. Food and Beverage Performance

Figure 1 shows that the growth performance of the food and beverage industry after the COVID-19 pandemic has decreased significantly. In 2019 the growth of the food and beverage industry was 7.78%, but in 2020 and 2021 it tends to decrease, to 1.58% in 2020, and 2.54% in 2022. To improve the performance of the food and beverage industry in Indonesia, open innovation should be conducted. The owner of a business must be innovative in running its business. Innovation is one of the keys for the company to be able to continue to be competitive (Castaneda, D. I., & Cuellar, S. 2020). Innovation has an important role in the progress of the firm, and employees who have innovation are needed by the firm as the basis for the realization of innovation (Alvarez-Meaza et al., 2020).

In this research, we focus on open innovation. Because current innovation cannot rely on internal innovation alone, but must also prioritize collaboration with other businesses outside the firm in developing their business. This means that both internal innovation and external innovation are known as open innovation strategies must be carried out simultaneously. Open innovation puts forward innovation that prioritizes internal and external ideas, companies are required to collaborate and not only innovate internally (Bayona-Saez et al., 2017). Open innovation has become a widely recognized and implemented concept among large corporations, facilitating a better understanding of new technologies and market developments, both within and outside of organizations (Aleksić et al., 2021a). Discuss about open innovation is not only done by large companies but has also become one of the most important things for small companies to do (De Marco et al., 2020). Although open innovation is one of the strategies often used by large companies, open innovation can also be a strategy that SMEs can use to improve business performance (Ahn et al., 2015). Given this, to develop a broader understanding and study, we tried to conduct this research in the SMEs sector, in this case specifically in the food and beverage industry sector in Indonesia. Some of the problems faced by SMEs' are innovation activities. Namely, contemporary organizations operate in a rapidly evolving and challenging environment, characterized by unpredicted changes, technological novelties, ever-changing customer demands, and uncertainty (Aleksić et al., 2021a).

Many factors influence innovation in a company. According to the literature, the fact that the firm must have a strategy to obtain innovation through a mix both internal and external sources and the firm should determine how to organize innovation related capabilities within the organization (Dahlander & Gann, 2010). In this present study, we will discuss the link between knowledge sharing and organizational learning capability as capabilities within the organization that influence open innovation, and its impact on business performance. This is in line with the opinion (Suseno, B. D. 2019) explained that many food and beverage industries are less than optimal in achieving profit, due to a lack of knowledge management implementation. Knowledge is a factor that can affect the performance of the food and beverage industry (Suseno, 2019).

The results of research conducted in paper (Setini et al., 2020) show that the performance and success of the firm's innovation were driven by the implementation of knowledge sharing. The results of their research also found that there was an influence between knowledge sharing on innovation. Knowledge sharing is part of knowledge management that can contribute to increasing business

competitiveness (Nham et al., 2020). Knowledge sharing studies can be at the individual level as well as at the organizational level (Yi, 2009). In this study, we focus more on individual-level studies. Knowledge sharing often occurs at the individual level (Yi, 2009).

Besides knowledge sharing, the effect of organizational learning capability on the performance of the food and beverage industry in Indonesia will be tested. Organizational learning is one of the important factors for the success of the company (Jui-Hsi et al., 2019). Previous research (Patky, J. (2020) shows that organizational learning capability has a positive and significant effect on innovation and company performance. The same finding was obtained in paper (Leitão et al., 2020) shows that open innovation, inbound or outbound has an effect on business performance.

The originality of this study is that open innovation and organizational learning capability mediate variables involving the relationship between knowledge sharing and business performance in the food and beverage industry in Indonesia. Organizational learning capability and open innovation as mediating variables according to the finding conducted in the paper (Lee, C. W., & Hidayat, N. 2018; Wu, I. L., & Chen, J. L. 2014) argued that organizational learning and innovation as a mediating variable. Another finding also found that innovation capability has a mediating role in the relationship between organizational learning capability and firm performance (Hailekiros & Renyong, 2016). The research contribution is expected to provide a research model by testing organizational learning capability and open innovation as mediation to food and beverage performance.

Based on the explanation of the previous background, in this paper we determine the key objective of the research:

1. Examine the effect of knowledge sharing on organizational learning capability.
2. Examine the effect of knowledge sharing on open innovation
3. Examine the effect of organizational learning capability on open innovation.
4. Examine the effect of knowledge sharing on business performance.
5. Examine the effect of organizational learning capability on business performance.
6. Examine the effect of open innovation on business performance.
7. Examine the mediating role of organizational learning capability and open innovation in the relationship of knowledge sharing on business performance behavior?

## 2. LITERATURE REVIEW

### 2.1 Business Performance

Performance is a fundamental concept as it helps any organization to evaluate its growth and progress (Chouayb et al., 2020). Performance measurement is fundamental for enhancing the value of companies and improving the decision-making process (Ponta et al., 2021). Contextually, for the attainment of competitive advantages and improvement of the performances, organizational learning, as well as innovation, can be considered as the foremost capabilities (Jui-Hsi et al., 2019). Currently, the competition is so competitive that requires innovation from the company. Without innovation, it will be difficult for the firm to get a competitive advantage (Sidharta et al., 2019).

Performance is the firm's ability to achieve organizational goals optimally (Ridha & Hidayat, 2020). In order to increase SME's business performance, innovation is one of the factors that can be considered to improve company performance (Ridha & Hidayat, 2020). Firm performance can be enhanced through the application of knowledge-sharing behavior between employees in the firm (Yi, 2009a). SMEs should capitalize on its internal knowledge for their employees. Knowledge sharing will help the firm to gain competitiveness and enhance the firm performance (Ngah & Jusoff, 2009). The success of companies has a greater difference in terms of products, services, and reputation (Lee & Hidayat, 2018).

### 2.2. Knowledge Sharing

Knowledge sharing is a set of individual behaviors involving sharing one's work-related knowledge and expertise with other members within one's organization, which can contribute to the ultimate effectiveness of the organization (Yi, 2009a). Knowledge sharing can define as a social interaction culture, involving the exchange of employee knowledge, experiences, and skills throughout the whole department or organization (Lin, 2007). Knowledge sharing is the process of transference of experience and organizational knowledge to business processes through communication channels between individuals (Oyemomi et al, 2016) . Another opinion (Yang, 2007) added that knowledge sharing enables managers to keep the individual learning flowing throughout the company and to integrate it for practical applications. In addition, people within an organization, by way of sharing their thoughts, beliefs, knowledge, and experience, mutually establish their common understandings. These practical applications and common

understandings are organizational knowledge. This results not only in the enhancement of employees' capabilities, but also the contribution to overall organizational effectiveness and bottom-line profit.

Knowledge sharing occurs when an individual is willing to assist as well as to learn from others in the development of new competencies (Yang, 2007). Generally, to sustain growth, innovation, and competitive edge, organizations are required to manage knowledge well (Suseno, 2019). The opinion expressed in the paper (Lin, 2007) also said that knowledge sharing is one of the predictors that can affect innovation performance. Knowledge Sharing is considered to be the most important task of a business firm. This knowledge is one of the primary resources for any organization to innovate or gain competitive advantages in the long run (Jui-Hsi et al., 2019). Knowledge sharing is also considered a key part of the firm strategy to use knowledge and expertise to create a sustainable competitive advantage (Yi, 2009).

### **2.3 Organizational Learning Capability**

The increase of competition, and the rapidly changing environment, have forced several companies to apply organizational learning capability (Hussain et al., 2018). Organizational learning capability is described as the organizational features, practices, and issues that enable the learning processes (Hailekiros & Renyong, 2016). Organizational learning capability is described as the organizational features, practices, and issues that enable the learning processes (Hailekiros & Renyong, 2016).

The organizational learning capability facilitates the profitability of the firm (Salas-Vallina, A., Alegre, J., & Fernández, R. 2017). Five dimensions are proposed to represent the essential factors that determine organizational learning capability: experimentation, risk-taking, interaction with the external environment, dialogue, and participative decision making (Chiva et al., 2007).

### **2.4 Open Innovation**

Traditionally, firms have innovated by looking in-house for new ideas, technologies, products, and processes that could give them sustainable competitive advantages (Bayona-Saez et al., 2017). Open innovation is a paradigm that defines the boundaries between the company and the corporate environment and allows the transfer of innovation both within the company and outside the company (Dokukina & Petrovskaya, 2020). Many organizations may be interested in increasing open innovation and thereby stimulating positive outcomes to the organization (Aleksić et al., 2021a).

However, successful innovation implementation requires control in the open innovation, and the firms have to reconfigure structures and processes continuously to match with the changing business environment (Hailekiros & Renyong, 2016). Open innovation can be classified into three, namely inbound open innovation, outbound open innovation, and coupled open innovation. Inbound innovation explains that knowledge flows from the external environment to the firm. On the other hand, in outbound innovation, internally developed knowledge flows toward the external environment (Enkel et al., 2009). Outbound innovation is used to show how companies can work together on process innovation and product development (Anderson & Hardwick, 2017).

Open innovation is taking the best and most effective route by the firm to move an idea from concept to product or service whether it is using internal or external resources. In this regard, it differs from closed innovation where a company would keep control of all aspects of innovation, with all the necessary capabilities and resources required held internally in the company (Hunter et al., 2018). Open innovation uses the inflow and outflow of knowledge with the aim of accelerating internal innovation and expanding the market for external use of innovation (Mirza et al., 2022). Inbound open innovation is stated as inner knowledge that allocates further knowledgeable fields, companies, and firms. Such standards define the practices as enhancing ways from other findings, but most firms do not depend on individual research and development. Knowledge advancement through those accomplishments did not drive internal investigations, even so, beneficial to business (Mirza et al., 2022).

## **2.3 Hypotheses and research models**

### **2.3.1. Knowledge Sharing and Organizational Learning Capability**

Based on the literature review, it is known that knowledge sharing effect organizational learning capability. The better the application of knowledge sharing, the more organizational learning capability will increase. Previous findings show that knowledge sharing will have a positive impact on organizational learning capability in the organization (Yang, 2007). The more individual intellectual capital is transferred, the organizational capabilities will become more strong. Knowledge sharing also has been known as a key factor that influences organizational learning, innovation, and competitive advantage (Rao, Y., Yang, M., &

Yang, Y. 2018) . Therefore, it can be hypothesized that there is an influence between knowledge sharing on organizational learning capability in the food and beverage industry in Indonesia.

*H1: Knowledge sharing positively influences organizational learning capability*

### **2.3.2. Knowledge Sharing and Organizational Learning Capability on Open Innovation**

Knowledge sharing as predictors of innovation in the organization. Knowledge sharing as a process of sharing knowledge between employees. If knowledge is shared, adopted, and implemented successfully in the organization as a new idea, process, service, or product, this will leads to innovation (Abdallah et al., 2012). One of the factors that can encourage innovation in a business is knowledge sharing(Castaneda & Cuellar, 2020). Besides that, innovation is also a driver of business competitiveness and company performance(Valdez-Juárez & Castillo-Vergara, 2021a). Innovation can also be promoted by the knowledge sharing implementation(Pian et al., 2019). In paper (Lee & Hidayat, 2018) also found that knowledge sharing is a predictor of business performance and also affects the level of innovation carried out by companies. Thus, based on the existing literature, the implementation of knowledge sharing will help companies to implement and lead open innovation. Therefore, we hypothesize that there is an influence between knowledge sharing on open innovation.

The results of research conducted in paper (Peris-Ortiz et al., 2018) show that the organizational learning capability of human resources in the firm is one of the factors that can increase the level of business innovation. Another finding also found that organizational Learning capability was positively related to the effectiveness of the outcomes of open innovation (Jui-Hsi, C., et al, 2019) . Based on the literature review study conducted in the paper (Patky, J. 2020). found that organizational learning has contributed to increasing innovation and company performance. In general, the results of research conducted by (Leitão et al., 2020) show that open innovation, inbound or outbound has an effect on performance. Therefore, we hypothesize that there is an influence between organizational learning capability on open innovation.

*H2: Knowledge sharing positively influences open innovation*

*H3: Organizational Learning Capability Positively Influences Open Innovation*

### **2.3.3. Knowledge Sharing, Organizational Learning Capability, and Open Innovation on Business Performance**

Knowledge sharing has a significant positive effect on innovation and will have an impact on improving business performance and competitiveness (Castaneda & Cuellar, 2020). Research conducted in paper (Aleksić et al., 2021a) found that knowledge sharing increases open innovation at the firm level. According to (Oyemomi et al, 2016), in their study found that knowledge sharing a key factor for driving innovation as well as the organization's business performance, as both explicit and tacit knowledge sharing promotes a novel robust approach for business-knowledge processes. Another previous study also revealed that knowledge sharing in the firm influence on performance of service innovation(Lee & Hidayat, 2018). Therefore, we hypothesize that there is an influence between knowledge sharing on business performance.

Organizational learning capability is considered as a key factor for gaining a sustainable competitive advantage and enhanced firm performance (Hailekiros & Renyong, 2016). It is argued that firms better at learning get a better chance of sensing events and trends in the marketplace which will, in turn, lead to better sales and increased market share, a flexible and responsive structure that responds to new challenges faster than the competitors, and fast improvement of market information processing activities (Hailekiros & Renyong, 2016). Thus, the literature review shows that the implementation of good organizational learning capability in companies will improve business performance. Therefore, we hypothesize that there is an influence between organizational learning capability on business performance.

Innovation is one of the important factors to achieve company success (Castaneda & Cuellar, 2020). The inbound or outbound dimensions of open innovation can improve business performance (Bigliardi, 2020) . Also added by (Dokukina, A. A., & Petrovskaya, I. A. 2020) open innovation has a contribution to performance. In paper (Jeong et al., 2020) the company's financial sustainability is determined by the implementation of open innovation. The result confirms the positive effects that eco-innovation and open innovation have on SMEs' corporate performance (Valdez-Juárez & Castillo-Vergara, 2021b). Thus, it can be

explained that to improve business performance, it is necessary to apply open innovation in running the business. Therefore, it can be hypothesized that there is an influence between open innovation on business performance.

*H4: Knowledge Sharing positively influences open innovation*

*H5: Organizational Learning Capability positively influences Business Performance*

*H6: Open Innovation positively influences Business Performance*

#### 2.3.4. Open Innovation and Organizational Learning Capability Mediate the Role of Knowledge Sharing on Business Performance

This study will also examine the mediating role of open innovation and organizational learning capability variables on business performance. Research conducted by (Lee & Hidayat, 2018) examined innovation as a mediating variable, and the result is that the type of innovation can mediate the role of knowledge sharing on performance. Another research (Hailekiros & Renyong, 2016) found that innovation capability has a mediating role on the relationship between organizational learning capability and firm performance. Moreover, it has a direct positive effect on firm performance. It also showed that organizational learning capability has a strong positive effect on both technological innovation capability and firm performance.

*H7: Organizational Learning Capability and Open Innovation Positively and Significantly Mediate the Role of Knowledge Sharing on Business Performance.*

Based on the literature review and the development of hypotheses that have been carried out, a conceptual framework for the research can be drawn up as follows:

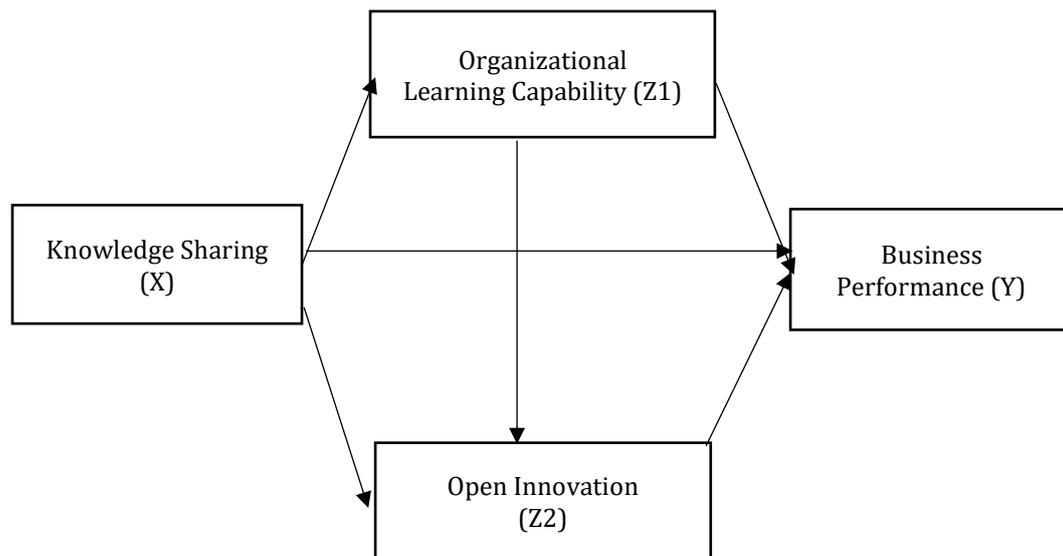


Figure 2. Research Model

### 3. METHODS

This research was designed using a quantitative method approach, which aims to examine the effect of knowledge sharing, organizational learning capability, and open innovation on business performance. The research was conducted on Small and Medium Enterprises in the Food and Beverage Industry Sector in Bogor, West Java, Indonesia. We distributed as many as 250 questionnaires, and the questionnaires were returned as many as 237 questionnaires, so the samples in this study were 237 respondents. The data analysis technique used structural equation modeling with the help of Amos Software Version 23. In this study, there were four variables tested, namely business performance, open innovation, knowledge sharing, and organizational learning capability. Performance using six indicators adopted from opinion (Darroch, 2005), knowledge sharing using 12 indicators, adapted from (Lin, 2007) (Van Den Hooff & Ridder, 2004) (Yi,

2009b), organizational learning capability using 14 statement items adopted from (Chiva et al., 2007), then open innovation uses 7 item statements adopted from the opinion (Aleksić et al., 2021b). All variables in this research were measured using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree. For more details, the measurement of research variables can be seen in table 1.

**Table 1.** Construct and Measurements

Variable	Dimensions/ Indicators
Business Performance (BP) (Darroch, 2005)	<ol style="list-style-type: none"> <li>1. BP1 : In general, this businekss is showing better performance when compared to a few months ago</li> <li>2. BP2 : In general, this business is showing better performance compared to a few years ago</li> <li>3. BP3 : In recent years, business goals have been well achieved</li> <li>4. BP4: Compared to other industries, our business is more profitable</li> <li>5. BP5: Compared to other industries, our company has a larger market share</li> <li>6. BP6: Compared to other businesses, ours is growing more rapidly</li> </ol>
Knowledge Sharing (KS) (Lin, 2007)(Van Den Hooff & Ridder, 2004)(Yi, 2009b)	<ol style="list-style-type: none"> <li>1. KS1 : I always give opinions and thoughts for business progress</li> <li>2. KS2 : When I have learned a new skill or acquired new information, I tell my coworkers about it.</li> <li>3. KS3 : When my coworkers have learned a new skill or acquired new information, they let me know about it.</li> <li>4. KS4 : Sharing knowledge among co-workers is considered normal in my company</li> <li>5. KS5 : I often share information, knowledge, skills and experiences with my coworkers</li> <li>6. KS6 : I tend to gather information and skills from my coworkers.</li> <li>7. KS7 : Colleagues in my company share their knowledge and skills with me when I ask for it.</li> <li>8. KS8 : I ask my colleagues to teach me about their experience and skills</li> <li>9. KS9 : People in my organization often share existing official reports and documents with members of my organization</li> <li>10. KS10 : When I need new knowledge and information, I will ask others</li> <li>11. KS11: Share experiences to coworkers</li> <li>12. KS12 : Answer questions of others in team meeting</li> </ol>
<b>Organizational Learning Capability (OLC)</b> (Chiva et al., 2007)	<ol style="list-style-type: none"> <li>1. OLC1: People here receive support and encouragement when presenting new ideas</li> <li>2. OLC2: People here receive support and encouragement when presenting new ideas</li> <li>3. OLC3: People are encouraged to take risks in this organization</li> <li>4. OLC4: People here often venture into unknown territory</li> <li>5. OLC5: Employees report information about what is happening outside the company related to company needs</li> <li>6. OLC6: There are systems and procedures for receiving, collating and sharing information from outside the company</li> <li>7. OLC7: People are encouraged to interact with the environment: competitors, customers, technological institutes, suppliers etc.</li> <li>8. OLC8: Employees are encouraged to communicate well</li> <li>9. OLC9: The creation of open communication at work</li> <li>10. OLC10: Cross-functional teamwork is a common practice here</li> <li>11. OLC11: Leaders facilitate good communication</li> <li>12. OLC12: Employees are often involved in important decisions</li> </ol>

	13. OLC13: Employees feel involved in important company decisions
	14. OLC14: The views of employees are considered by the company in making decisions
Open Innovation (OI) (Aleksić et al., 2021b)	<ol style="list-style-type: none"> <li>1. OI1 : Companies often acquire new knowledge/technology from outside to use</li> <li>2. OI2 : Companies often seek outside ideas to add/create value</li> <li>3. OI3 : Customers are involved in product/service development</li> <li>4. OI4 : We tend to open spaces for collaboration with outsiders</li> <li>5. OI5 : We are open if there are other companies who want to learn with us</li> <li>6. OI6 : Participate in business activities similar to other businesses</li> <li>7. OI7 : Suppliers are involved in process and product development</li> </ol>

## 4. RESULTS

### 4.1. Measurement Model

Confirmatory Factor Analysis (CFA) is used to measure how well the indicators used are able to measure the research variables. We processed the Confirmatory Factor Analysis (CFA) by using AMOS software version 23. The loading factor value must be  $> 0.50$  [Hair et al, 2013].

Based on the results of the study, there were 3 indicators that were discarded in the study because the loading factor value  $< 0.50$ , namely the KS2 indicator with a loading factor of 0.469 ( $0.469 < 0.50$ ), the KS 11 indicator with a loading factor of 0.498 ( $0.498 < 0.50$ ), and organizational learning capability indicator, namely the OLC2 with a loading factor of 0.443 ( $0.443 < 0.50$ ). Until the three indicators were removed from the research model. Next, test the reliability test by looking at the value of Construct Reliability (CR) and Average Variance Extract (AVE). The value of Construct Reliability (CR) must exceed 0.70 and the value of Average Variance Extracted (AVE) should be  $> 0.50$  [Hair et al, 2013]. The result of the measurement model can be seen in Table 2.

**Table 2.** The Measurement Model Result

Variables/Indicator	Factor Loading	Construct Reliability (CR)	Average Variance Extracted (AVE)	Decision
<b>Business Performance (BP)</b>				
BP1	0.735			
BP2	0.749			
BP3	0.734	0.899	0.599	Valid and Reliable
BP4	0.815			
BP5	0.774			
BP6	0.832			
<b>Knowledge Sharing (KS)</b>				
KS1	0.689			
KS3	0.680			
KS4	0.796			
KS5	0.835			
KS6	0.799	0.926	0.573	Valid and Reliable
KS7	0.752			
KS8	0.762			
KS9	0.757			
KS10	0.779			
KS 12	0.704			
<b>Organizational Learning Capability (OLC)</b>				
OLC1	0.740			
OLC3	0.771			
OLC4	0.709			
OLC5	0.718	0.934	0.552	Valid and Reliable
OLC6	0.763			

OLC7	0.807			
OLC8	0.845			
OLC9	0.853			
OLC10	0.828			
Open Innovation(OI)				
OI1	0.755			
OI2	0.789			
OI3	0.731			
OI4	0.707	0.895	0.551	Valid and Reliable
OI5	0.713			
OI6	0.74			
OI7	0.756			

Table 2 showed that all indicators in this research are valid and reliable. Therefore, it can be continued for further testing.

#### 4.2. Normality Testing

The aim to conduct normality testing is to assess the distribution of data in a group of data or variables, whether the distribution of the data is normally distributed or not. The result is shown in Table 3.

**Table 3.** The Assessment of normality

Variable	min	max	skew	cr	kurtosis	cr
BP6	1,000	5,000	-.304	-1.909	-.465	-1.462
BP5	1,000	5,000	-.177	-1.115	-.674	-2.117
BP4	1,000	5,000	-.403	-2,535	-.472	-1.484
BP3	1,000	5,000	-.025	-.155	-.875	-2.751
BP2	1,000	5,000	-.218	-1,369	-.622	-1.953
BP1	1,000	5,000	-.303	-1.901	-.474	-1.488
OI1	1,000	5,000	-.560	-3.522	-.098	-.307
OI2	1,000	5,000	-.586	-3.682	.023	.074
OI3	1,000	5,000	-.272	-1,708	-.561	-1,762
OI4	1,000	5,000	-.333	-2.095	-.451	-1.417
OI5	1,000	5,000	-.235	-1,479	-.427	-1,340
OI6	1,000	5,000	-.139	-.871	-.020	-.064
OI7	1,000	5,000	-.301	-1,890	-.568	-1,785
OLC10	1,000	5,000	-.519	-3,259	-.088	-.276
OLC9	1,000	5,000	-.528	-3.321	-.163	-.512
OLC8	1,000	5,000	-.661	-4.152	-.031	-.099
OLC7	1,000	5,000	-.508	-3.195	-.189	-.593
OLC6	1,000	5,000	-.620	-3,898	.156	.490
OLC5	1,000	5,000	-.402	-2,528	-.064	-.201
OLC4	1,000	5,000	-.245	-1.542	-.396	-1.244
OLC3	1,000	5,000	-.214	-1,347	-.587	-1.843
OLC1	1,000	5,000	-.305	-1.918	-.359	-1.130
KS1	1,000	5,000	-.134	-.843	-.619	-1,945

Variable	min	max	skew	cr	kurtosis	cr
KS3	1,000	5,000	-.014	-.091	-.227	-.715
KS4	1,000	5,000	-.403	-2.532	-.317	-.995
KS5	1,000	5,000	-.469	-2,947	-.049	-.155
KS6	1,000	5,000	-.490	-3.077	.179	.562
KS7	1,000	5,000	-.445	-2,794	.368	1.156
KS8	1,000	5,000	-.320	-2009	-.249	-.782
KS9	1,000	5,000	-.224	-1.406	-.414	-1.302
KS10	1,000	5,000	-.365	-2.297	-.235	-.739
KS12	1,000	5,000	-.237	-1.490	-.435	-1.368
Multivariate					50,639	8.356

The normality testing is useful for determining the data that has been collected is normally distributed or taken from a normal population. In structural equation modeling using Amos Software version 23, the normality testing can be seen from the value of the skewness and kurtosis. According to Schumacker & Lomax, (2010) the skewness and kurtosis should be between 1.0 to 1.5 and the critical ratio 2.58. In table 3, the result of normality testing is shown.  $< \pm 2.58$ .

The result of normality testing as shown in table 3 that the data are not normally distributed. It is shown from the value not in the skewness and kurtosis criteria 1.0 to 1.5 and the multivariate test results of  $cr = 8.356$ . The value multivariate  $cr 8.356 > 2.58$ . Therefore, the data does not pass the normality test. Furthermore, the outlier data was examined, and outliers were found in the observation numbers 230, 110, and 219.

**Table 4.** Normality test results after the outliers are excluded

Variable	min	max	skew	cr	kurtosis	cr
BP6	1,000	5,000	-.264	-1,647	-.523	-1.632
BP5	1,000	5,000	-.183	-1.143	-.640	-1,998
BP4	1,000	5,000	-.418	-2,608	-.430	-1.342
BP3	1,000	5,000	-.022	-.137	-.859	-2,683
BP2	1,000	5,000	-.229	-1.427	-.596	-1.861
BP1	1,000	5,000	-.298	-1.861	-.465	-1.453
OI1	1,000	5,000	-.571	-3.566	-.093	-.289
OI2	1,000	5,000	-.620	-3,874	.071	.222
OI3	1,000	5,000	-.249	-1.554	-.568	-1,773
OI4	1,000	5,000	-.339	-2.118	-.442	-1.381
OI5	1,000	5,000	-.237	-1,479	-.445	-1,388
OI6	1,000	5,000	-.142	-.886	-.003	-.008
OI7	1,000	5,000	-.296	-1.849	-.559	-1.746
OLC10	1,000	5,000	-.538	-3.358	-.072	-.226
OLC9	1,000	5,000	-.550	-3.437	-.121	-.376
OLC8	1,000	5,000	-.671	-4.192	.006	.018
OLC7	1,000	5,000	-.525	-3.276	-.173	-.542
OLC6	1,000	5,000	-.617	-3,855	.181	.567
OLC5	1,000	5,000	-.408	-2,550	-.077	-.240
OLC4	1,000	5,000	-.253	-1,577	-.407	-1,270
OLC3	1,000	5,000	-.215	-1.343	-.564	-1,761
OLC1	1,000	5,000	-.293	-1.828	-.348	-1.085
KS1	1,000	5,000	-.131	-.820	-.619	-1,933
KS3	1,000	5,000	-.019	-.117	-.189	-.592

Variable	11					
	min	max	skew	cr	kurtosis	cr
KS4	1,000	5,000	-.381	-2.381	-.327	-1.021
KS5	1,000	5,000	-.458	-2.862	-.041	-.128
KS6	1,000	5,000	-.466	-2,908	.193	.602
KS7	1,000	5,000	-.414	-2.585	.359	1.122
KS8	1,000	5,000	-.313	-1.956	-.250	-.781
KS9	1,000	5,000	-.218	-1,358	-.404	-1,260
KS10	1,000	5,000	-.376	-2.349	-.203	-.634
KS12	1,000	5,000	-.203	-1,268	-.473	-1.476
Multivariate					15,334	2,514

Table 4 above shows that the skewness and kurtosis value is already between 1.0 to 1.5 and the multivariate test results of  $cr = 2.514$ , this value  $< \pm 2.58$ .

#### 4.3 The goodness of Fit Test

The goodness of fit model aims to do the evaluation in general the degree of compatibility of the research model. The criteria consist of Adjusted GFI (AGFI)  $> 0.90$ , Goodness of Fit Index (GFI)  $> 0.90$ , CFI  $> 0.90$ , RMSEA  $< 0.08$  below, and RMR  $< 0.05$ . The results of the goodness of fit test model can be seen in Table 5 below.

**Table 5.** The Goodness of Fit Test Results

Criteria	Result	Decision
RMSEA	0.065	good fit
CMIN/DF	0.997	good fit
GFI	0.795	Marginal fit
AGFI	0.763	Marginal fit
RMR	0.046	good fit
CFI	0.913	good fit
TLI	0.906	Good Fit

Based on the results of the goodness of fit test model in this study, it is known that the goodness of fit test model has met the existing criteria [Hair et al, 2013].

#### 4.4 Hypothesis Testing

Next, we tested the hypothesis that has been proposed based on the existing theoretical review and previous study. The analysis of Structural Equation Modeling (SEM) was done to test the hypothesis. The proposed structural equation modeling (SEM) is shown in figure 2. The hypothesis result was tested by using the critical ratio (CR) or t-value, and probability value (P-Value). The critical ratio must be  $\pm 1.96$ , and the value of probability (P-value) does not exceed 0.05 (Byrne, 2010). The hypothesis test results can be seen in Table 6.

**Table 6.** The Hypotheses Testing Results

	Estimate	SE	CR	P-Value	Decision
OLC <--- KS	.714	.090	8,690	0.000	Accepted
OI <--- KS	.358	.090	4.425	0.000	Accepted
BP <--- KS	.261	.084	3.381	0.000	Accepted
OI <--- OLC	.489	.087	5.742	0.000	Accepted
BP <--- OLC	.208	.081	2,555	0.011	Accepted
BP <--- OI	.463	.086	5,241	0.000	Accepted

Mediation Hypotheses Testing	
KS through OLC on OI	t-value : 3.284 Decision : Significant p-value : 0.001
KS through OLC, OI on BP	t-value : 1,979 Decision : Significant p-value : 0.047
OLC through OI on BP	t-value : 3.887 Decision : Significant p-value : 0.000

The results of hypothesis testing indicate that all hypotheses proposed in this study are accepted. This can be seen from the p-value < 0.05 and cr > 1.96. Thus, knowledge sharing has a positive and significant effect on organizational learning capability, open innovation, and business performance. Organizational learning capability has a positive and significant effect on open innovation and business performance. Open innovation has a positive and significant impact on business performance.

#### 4.5 Direct and Indirect Effects

**Table 7.** Direct and Indirect Effect

The Form of Relations	Direct Effect	Indirect Effect			Total Effects
		Organizational Learning Capability	Open Innovation	Organizational Learning Capability and Open Innovation	
Knowledge Sharing--> Organizational Learning Capability	0.714	-	-	-	0.714
Knowledge Sharing --> Open Innovation	0.358	0.349	-	-	0.708
Organizational Learning Capability --> Open Innovation	0.489	-	-	-	0.489
Knowledge Sharing--> Business Performance	0.261	-	-	0.476	0.737
Organizational Learning Capability --> Business Performance	0.208	-	0.227	-	0.435
Open Innovation --> Business Performance	0.463	-	-	-	0.463

Table 7 shows that there is an indirect effect from one variable to another.

1. There is a direct influence between knowledge sharing on organizational learning capability of 0.714 (71.4%)
2. There is a direct effect of knowledge sharing on open innovation of 0.358 (35.8%), and an indirect effect of knowledge sharing through organizational learning capability on open innovation of 0.349 (34.9%).
3. There is a direct effect of organizational learning capability on open innovation of 0.489 (48.9%).
4. There is a direct influence of knowledge sharing on business performance of 0.261 (26.1%), and there is an indirect effect of knowledge sharing through organizational learning capability and open innovation on business performance of 0.476 (47.6%).
5. There is a direct effect of organizational learning capability on business performance of 0.208, and there is an indirect effect of organizational learning capability through open innovation on business performance of 0.227.
6. There is a direct effect of open innovation on business performance of 0.463 (46.3%)

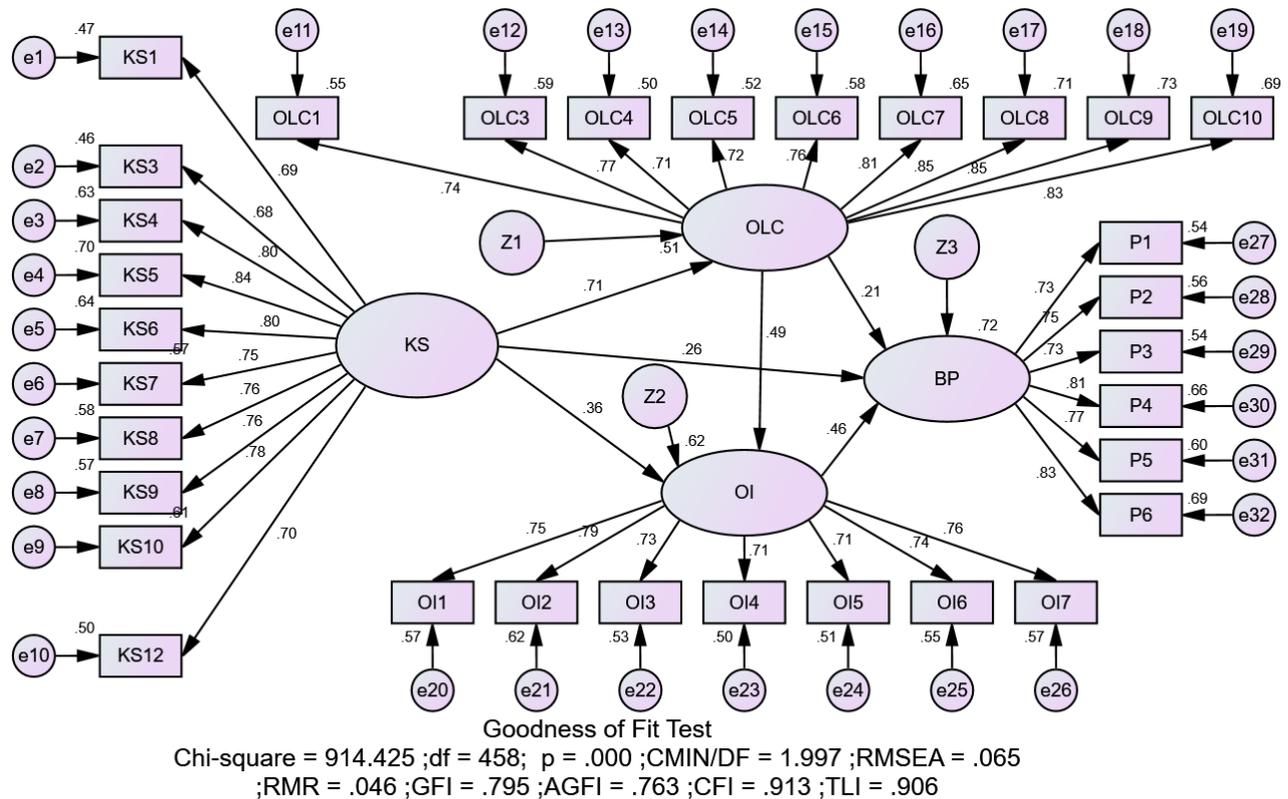


Figure 2. The Structural Model

**5. DISCUSSION**

This study examines the effect of knowledge sharing, organizational learning capability, open innovation, and the business performance of MSMEs in the creative industry sector in Indonesia. The creative industry is one sector that is starting to become popular in Indonesia, and has a significant contribution to Indonesia's economic growth.

Business competition is getting tougher, making business people must be able to implement the right strategy in order to improve business performance. In this study, it is tested whether knowledge sharing, organizational learning capability, and open innovation can improve business performance in Indonesia. The hypothesis was developed, namely knowledge sharing has a positive and significant effect on organizational learning capability, knowledge sharing has a positive and significant effect on organizational learning capability open innovation, knowledge sharing has a positive and significant effect on business performance, organizational learning capability has a positive and significant effect on open innovation, organizational learning capability has a positive and significant effect on business performance, open innovation has a positive and significant effect on business performance.

The results of the study indicate that business performance is influenced by knowledge sharing, organizational learning capabilities, and open innovation. Testing the first hypothesis in this study shows that there is a positive and significant effect between knowledge sharing on organizational learning capability. This can be seen from the critical ratio (cr) value of 8.690 (8.690 > 1.96) and the p-value of 0.000 (0.000 < 0.05). Thus it can be explained that there is a positive and significant influence between knowledge sharing on organizational learning capability. In other words, if the implementation of knowledge sharing in the food and beverage industry increases, this will increase organizational learning capability. Conversely, if the implementation of knowledge sharing is low, then this will lead to low organizational learning capability. Knowledge sharing will give the advancement of organizational learning(Yang, 2007). The knowing process is composed of sharing, thinking and learning components that have a reciprocity relationship. Knowledge sharing enables managers to keep the individual learning flowing throughout the

company and to integrate it for practical applications. In addition, people within an organization, by way of sharing their thoughts, beliefs, knowledge and experience, mutually establish their common understandings (Yang, 2007).

The second hypothesis examines the effect of knowledge sharing on open innovation. The results show that knowledge sharing has a positive and significant effect on open innovation. This can be seen from the critical ratio (cr) value of 4.425 ( $4.425 > 1.96$ ) and significant at 0.000 ( $0.000 < 0.05$ ). This means that there is an influence between knowledge sharing on open innovation carried out by the food and beverage industry in Indonesia. Open innovation can become a culture in the food and beverage industry which ultimately increases business success by increasing the implementation of knowledge sharing. The results of research conducted in paper (Castaneda & Cuellar, 2020) show the influence of knowledge sharing on innovation. Employee willingness in knowledge sharing will enhance the innovation capability (Lin, 2007).

Furthermore, the third hypothesis examines the effect of knowledge sharing on business performance in the food and beverage industry sector. The results show that knowledge sharing has a positive and significant effect on business performance. This can be seen from the critical ratio (cr) of 3.381 ( $3.381 > 1.96$ ) and significant at 0.000 ( $0.000 < 0.05$ ). This means that there is an influence between knowledge sharing on the performance of the food and beverage industry in Indonesia. Business performance will increase by increasing the implementation of knowledge sharing. On the other hand, the application of a low knowledge sharing culture will reduce business performance. The results of this study are in line with the findings of previous research by (Lee & Hidayat, 2018) who found the effect of knowledge sharing on business performance. Also added by (Darroch, 2005) knowledge is one of the factors to improve company performance. Knowledge sharing becomes an important part in enhancing performance (Rao et al., 2018).

The next hypothesis, fourth hypothesis examines the effect of organizational learning capability on open innovation. The results showed that the cr value was 5.742 ( $5.742 > 1.96$ ) and the p-value was 0.011 ( $0.011 < 0.05$ ). This shows that the cr (critical ratio) value is greater than 1.96 and the p-value is less than 0.05. Thus, it can be informed that there is an influence between organizational learning on open innovation. This means that if organizational learning capability is increased, it will further increase the ability of businesses to carry out open innovation. The research findings are in line with the findings of research conducted in paper (Yaşar Uğurlu, Ö., & Kurt, M. (2016) there was a strong relationship between organizational learning capability and innovation.

Next, testing the effect of organizational learning capability on the performance of the food and beverage industry. The results showed that the cr value of 2.555 ( $2.555 > 1.96$ ) and a p-value of 0.000 ( $0.000 < 0.05$ ). This shows that the cr value is greater than 1.96 and the p-value is less than 0.05. Thus, it can be informed that there is an influence between organizational learning on business performance. This means that if organizational learning capability is improving, it will further increase the ability of the business to improve its performance. Conversely, if organizational learning capability is low, then business performance will also decrease. The findings of research conducted by (Hussain et al, 2018) organizational learning capability (OLC) has a positive and significant effect on performance.

The sixth hypothesis in this study examines the effect of open innovation on the performance of the food and beverage industry in Indonesia. Based on the results of the study, the cr value was 5.241 ( $5.241 > 1.96$ ) and the p-value was 0.000 ( $0.000 < 0.05$ ). This shows that the cr value is greater than 1.96 and the p-value is less than 0.05. Thus, it can be informed that there is an influence between open innovation on business performance. This means that if the company has a better level of open innovation, then the company will improve its performance. Conversely, if open innovation is low, then the company's performance will increase. Open innovation as a booster to accelerate business performance (Dokukina, A. A., & Petrovskaya, I. A. (2020). The other researcher (Jeong et al., 2020) argued the company's financial sustainability is determined by the implementation of open innovation. This shows that open innovation has a strategic role in improving business performance, including in this case in the food and beverage industry sector.

Based on direct and indirect effects, it can be explained the variables that have the greatest influence on business performance, in the context of the food and beverage industry in Indonesia. In this case, it will also be explained whether the direct influence has the greatest influence on business performance, compared to the indirect effect. The results show that there is a direct effect of knowledge sharing on business performance of 0.261 (26.1%), and there is an indirect effect of knowledge sharing through organizational learning capability and open innovation on business performance of 0.476 (47.6%). Thus, it can be informed that indirect effects have a greater effect on improving business performance. The results of testing the mediation effect hypothesis also show that there is a positive and significant effect between knowledge sharing through organizational learning capability and open innovation on business performance. In other words, organizational learning capability and open innovation have a role as

mediating or intervening that can improve business performance. The result relates to mediating effect of open innovation in forming a relationship on business performance, it can be seen that the direct effect of organizational learning capability on business performance is 0.208, and indirect organizational learning capability through open innovation is 0.227. Thus, open innovation can mediate the effect of organizational learning capability on business performance.

## 6. CONCLUSIONS AND RECOMMENDATIONS

This present study has important theoretical and empirical implications related to business performance in the case of the food and beverage industry in Indonesia. This paper contributes to developing and analyzing the theory, which includes performance, knowledge sharing, organizational learning capability, and open innovation.

The results show that knowledge sharing strongly influences organizational learning capability, open innovation, and business performance. Organizational learning capability strongly influences open innovation and food and beverage performance. Open innovation strongly influences business performance. These results of the study indicate that business performance in the food and beverage sector can be influenced by knowledge sharing, organizational learning capability, and open innovation. The better the implementation of knowledge sharing, organizational learning capability, and the implementation of open innovation, it will improve business performance. On the other hand, if knowledge sharing, organizational learning capability, and open innovation are low, this will have an impact on decreasing business performance.

Based on direct and indirect effects, it is known that the mediating role of organizational learning and open innovation has a positive and significant influence in mediating the effect of knowledge sharing on the performance of the food and beverage industry in Indonesia. This means that the direct effect of knowledge sharing is smaller than the indirect effect through organizational learning capability and open innovation in improving the performance of the food and beverage industry in Indonesia. In other words, organizational learning capability and open innovation have a significant role in mediating the effect of knowledge sharing on performance.

To improve business performance in the food and beverage industry in Indonesia, it is recommended that companies continue to improve their ability to innovate, especially open innovation. To increase open innovation, companies must implement knowledge sharing and organizational learning capability well. The indirect effect on performance has a greater influence, therefore it is recommended to improve the performance of the food and beverage industry in Indonesia, the most important thing is to first improve the implementation of open innovation and increase organizational learning capability.

## 7. LIMITATIONS OF THE STUDY AND FUTURE RESEARCH

This research does not of course still have research limitations. Our research only examines the effect of knowledge sharing, organizational learning capability, and open innovation, on the business performance of the food and beverage industry. Data analysis using Structural Equation Modeling was only tested on unidimensional (first-order construct). Future research will be expected to be tested with a multidimensional approach (second-order construct), which is to test all dimensions that exist in each variable. For future research, it is also recommended that this research be carried out more broadly, including the addition of research objects and research variables. In the future, it is necessary to examine other variables as mediations that form the relationship between knowledge sharing and business performance in the food and beverage industry sector in Indonesia.

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