





## Effect of knowledge sharing and technological innovation capabilities on competitive advantage on MSME's culinary sector

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### ABSTRACT

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#### Keywords

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This research aims to examine and analyze the results of knowledge sharing and technological innovation capabilities on competitive advantage. This research's focus is on the MSMEs in the culinary industry in Makassar city. The approach to sampling in this study was a purposive sampling method, whereas the data collection technique used was a questionnaire. The examination of the data was conducted using path analysis. Results show that knowledge sharing has an impact on technological innovation capabilities, knowledge sharing has an effect on competitive advantage, technological innovation capabilities have an effect on competitive advantage, and knowledge sharing has an effect on competitive advantage through technological innovation capabilities. In terms of their relation to technological innovation capabilities, MSMEs in the culinary sector in the city of Makassar have their own challenges in managing their businesses. Companies have limitations in implementing the use of technology, especially MSMEs that are micro in nature and are still pioneering. Based on the results and discussion, it can be concluded that 1) knowledge sharing has an effect on technological innovation capabilities in culinary sector MSMEs in Makassar city; 2) knowledge sharing has an effect on competitive advantage in culinary sector MSMEs in Makassar city; 3) technological innovation capabilities shape the competitive advantage in the culinary sector MSMEs in the city of Makassar; and 4) knowledge sharing has an effect on competitive advantage through technological innovation capabilities in the culinary sector Makassar city's MSMEs, which shows that the higher the knowledge sharing, the higher the competitive advantage through technological innovation capabilities.

**Contribution/Originality:** The existing literature has predominantly merely discussed various problems experienced by MSMEs, especially in the culinary sector. This research contributes by emphasizing that MSMEs in the culinary sector need to implement a comprehensive knowledge strategy and expand their technological innovation capabilities by innovating and utilizing current technology.

## 1. INTRODUCTION

The rapid changes in the world of business are unavoidable. Therefore, every Micro, Small, and Medium-sized Enterprises (MSMEs) is encouraged to always be able to understand consumer desires as well as various changes that occur in their business environment so that they are able to compete with other companies. Thus, MSMEs are required to create, establish, and implement approaches that can be employed to face the globalization.

The strategic and important role of MSMEs can be viewed from various angles. First, the number of industries is large and exists in every sector of the economy. Second, it has huge potential to create more job opportunities when compared to the same investment in a larger-scale business. Third, the contribution of MSMEs to the creation of Gross Domestic Product (GDP) is substantial. Fourth, contribute to a nation's international trade with a fairly stable export value.

Various problems experienced by MSMEs, especially in the current culinary sector, are how internal actors (owners, people in charge, production, and marketing) maintain business continuity. MSME actors in fact have different backgrounds and different levels of knowledge, so this means internal actors have to take care of each other and share knowledge with each other. To maintain a competitive advantage, companies need to update their resource base as the environment changes. Innovation is always important for the long-term survival and growth of companies (Serrano-García, Bikfalvi, Llach, & Arbeláez-Toro, 2022).

The various problems faced by MSMEs require breakthroughs so that MSMEs can compete, survive, innovate, and have excellence in producing products that are acceptable to the market. The issue that is currently of concern is how to manage knowledge management and digitalization trends in terms of technological innovation. Organizations have realized that to be able to compete in rapidly developing market conditions, it is necessary to develop competencies and knowledge within the organization (Wening, 2023).

Knowledge sharing is a practice that helps employees in the company complete both implicit and explicit work (Ganguly, Talukdar, & Chatterjee, 2019). Knowledge sharing is expected to be able to encourage the ability of human resources to innovate and then be able to find creative business ideas (Azeem, Ahmed, Haider, & Sajjad, 2021; Nham, Nguyen, Tran, & Nguyen, 2020; Rehan, 2022).

However, there is a significant increase in the trend towards digitalization. The advancement of information technology has altered company practices as well as customer behavior. It is anticipated that this digitalization will have a big effect on the economy. Simultaneously, the digital age presents unprecedented economic prospects via a variety of innovative approaches founded on digital services. Also, the traditional market system's business model for transactions is quickly giving way to e-commerce.

For many businesses, technological innovation is a major source of competitive advantage and a major driver of growth. Coordination between many players and the integration of activities across specialized functions, knowledge domains, contexts, and applications are necessary to achieve innovation. Innovation capacity within the organization is a requirement (Serrano-García et al., 2022).

Innovation is a key factor in sustainable growth. Companies can gain long-term success only by creating innovative products, systems, services, and departments according to customer demands (Azeem et al., 2021). Companies with more innovative capabilities will be more successful when responding to environmental changes and are able to increase competitiveness (Wening, 2023). Companies must carry out business transformation so that they can optimally compete in the digital economy arena, because implementing it requires a new business model. Based on the phenomena, gaps, or problems from the explanation above, this encourages researchers to conduct a study on knowledge sharing and technological innovation capabilities for competitive advantage in culinary sector MSMEs in Makassar City.

## 2. LITERATURE REVIEW

### 2.1. Knowledge Sharing

Knowledge sharing is a cycle in which people trade their insight with one another, tacit information, and explicit knowledge (Singh, Gupta, Busso, & Kamboj, 2021). Tacit information is individual in nature, which is perplexing to plan, so it is hard to interact with others. Roughly still in an individual's brain, thoughts and feelings can emerge, yet they are challenging to gauge. For instance, an imaginative thought communicated orally can have a structure of thoughts, discernments, perspectives, bits of knowledge, abilities, etc. In the meantime, explicit knowledge can be

articulated in words and numbers, dispersed as information, particulars, and manuals. This type of knowledge has been reported or formalized, effectively put away, repeated, dispersed, and contemplated. According to Bahari, Saufi, Zainol, Samad, and Yaziz (2023), the improvement of knowledge sharing should take into account the components of information sharing, such as members (representatives), benefactors, media, and the accessibility of people who work with information sharing itself. A trust manages this large number of components. The association's information-sharing interaction will suffer without worker trust (Aslam, 2021).

Offergelt and Venz (2023) demonstrate that according to a conduct perspective, information sharing comprises two things, in particular: knowledge donating and knowledge collecting. The clarification of the two information-sharing ways of behaving above is as follows: 1) knowledge-donating, specifically the way that one conveys one's singular scholarly model to other people. Information can likewise be deciphered as the capacity of representatives to convey their insight, including work insight, thoughts, aptitude, and relevant data to different workers. 2) Knowledge collection, to be specific, the way in which an individual counsel's different gatherings to complete a singular's scholarly model. Information gathering is also the capacity of representatives to gather information from workers, including work experience information, thoughts, abilities, and logical data. The pointers used to gauge information sharing incorporate 1) installed information, 2) epitomized information, 3) uncultured information, 4) implanted information, and 5) encoded information (Bahari et al., 2023).

## 2.2. Technological Innovation Capabilities

Innovation is one of the variables that impacts the progress of new items, and by utilizing modern innovation, organizations can make better or more inventive items. There are a few obvious benefits that demonstrate how significant an impact item separation benefits have, particularly in cutting-edge organizations (Khlystova, Kalyuzhnova, & Belitski, 2022). Technological innovation capacities are a kind of unambiguous resource or asset that incorporates innovation, items, resources, information, experience, and organization (Bahari et al., 2023; Seo & Kim, 2020; Yaw, 2023). Technological innovation capacities are the abilities and information expected to actually retain, ace, and work on existing advancements and to make new ones (Aslam, 2021; Khlystova et al., 2022). Innovative work exercises are a significant part of an organization's mechanical development exercises and the main immaterial development consumption (Temel, Mention, & Yurtseven, 2023). In addition to the fact that fruitful mechanical development relies upon mechanical capacities, it likewise requires other advancement abilities in assembly, promotion, association, vital preparation, learning, and the asset portion (Khlystova et al., 2022).

Based on a utilitarian approach, Khlystova et al. (2022) divide technological innovation skills into seven areas: the ability to learn specifically, the ability to do innovative work, the ability to make things, the ability to market them, the ability to identify assets, the ability to coordinate, and the ability to make important plans. Likewise, it is contended that learning capacity is the capacity to incorporate significant new information to acquire an upper hand (Temel et al., 2023). Also, innovative work capacity is the capacity to foster new items utilizing new methodologies and advances. Fabricating capacity is the capacity to deliver items to adjust to economic situations utilizing the result of innovative work (Yaw, 2023).

## 2.3. Competitive Advantage

According to Danso, Adomako, Amankwah-Amoah, Owusu-Agyei, and Konadu (2019), a company has a competitive advantage when it develops a product or service that its target market perceives as superior to serious alternatives. Competitive advantage is a benefit over rivals acquired by conveying more prominent client esteem, through lower costs, or by giving more advantages relating to higher value (Azeem et al., 2021; Varadarajan, 2020). Porter (1993) divided competitive advantage into three categories: focus, variation, and unique cost-benefit. The ability of an organization to establish the lowest price in comparison to its competitors without sacrificing the quality

of its products or services is known as cost advantage. Organizations can differentiate themselves from their competitors by using separation to create goods or services (McCarter, Haeruddin, Mustafa, Abadi, & Syahrul, 2022).

The focal point of the organization should be on a specific portion in more detail. The proposed methodology requires different hierarchical courses of action, control techniques, and escalated frameworks. Enormous organizations with access to huge assets, as a rule, contend on the premise of cost benefit or separation, while small organizations frequently contend on the premise of concentration. Competitive advantage dimensions are: advancement, quality, cost, delivery dependability, and time to deliver (Othman, Khatab, Esmaeel, Mustafa, & Sadq, 2020). Based on the description previously stated, the variables involved in this study can be described through a framework as follows:

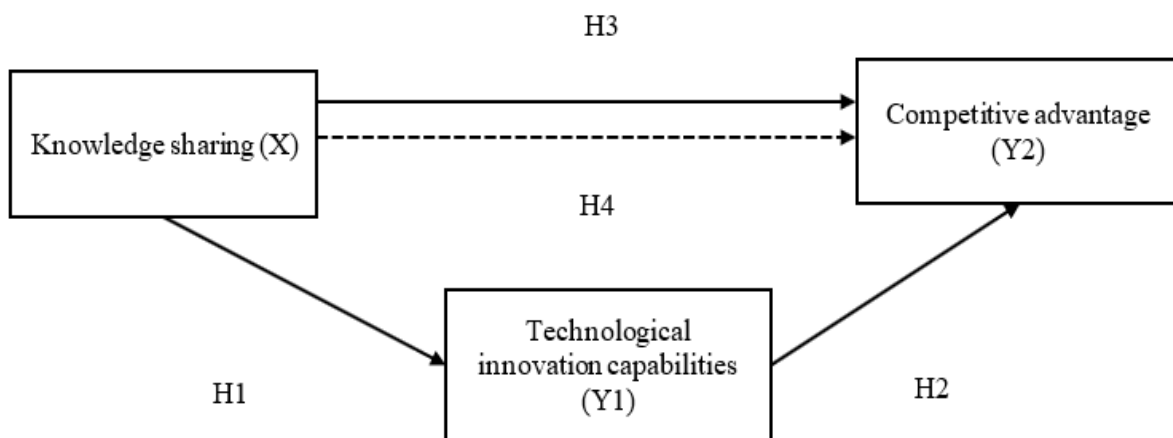


Figure 1. Author's conceptualization.

Figure 1 illustrates the relationship among variables and how they are connected and depicts the research framework. According to Figure 1, four hypotheses can be formulated as follows:

- H<sub>1</sub>: Knowledge sharing has a significant effect on competitive advantage.
- H<sub>2</sub>: Knowledge sharing has a significant effect on technological innovation capabilities.
- H<sub>3</sub>: Technological innovation capabilities have a significant effect on competitive advantage.
- H<sub>4</sub>: Knowledge sharing has a significant effect on competitive advantage through technological innovation capabilities.

### 3. METHODS

Current research involves a quantitative approach with a descriptive approach when performing data analysis. Researchers use two types of statistical analysis to look at the real-world data they collect: 1) descriptive statistical analysis, which tries to figure out how often the answers to the questionnaires fall into different groups; and 2) inferential statistical analysis, which uses path analysis with Statistical Package for the Social Sciences (SPSS) software version 25 to test the research hypothesis. The study's population is the Micro, Small, and Medium Enterprises (MSMEs) in the culinary sector in the city of Makassar. However, the exact MSME population in the culinary sector in the city of Makassar in this study is not documented properly, so this study uses a formula from Lemeshow, Hosmer, Klar, and Lwanga (1990). Based on the formula obtained, there were 100 samples that became respondents, namely the culinary sector MSMEs in the city of Makassar. The sampling technique in this study used a non-probability sampling technique with a purposive method approach. The criteria for the sample are MSMEs engaged in the culinary sector (food, beverage, or both) in the city of Makassar and having employees.

In this study, there are several variables, namely: 1) the independent variable, namely knowledge sharing; 2) the dependent variable, namely technological innovation capabilities; and 3) the intervening variable, namely competitive advantage. Data collection was carried out through field research, which is research carried out directly in the field. This research was carried out through direct interviews with micro, small, and medium enterprises (MSMEs), especially in the culinary sector, and by providing a list of questions in the form of a questionnaire.

## 4. RESULTS AND DISCUSSION

### 4.1. Characteristics of Respondents

Based on Table 1, the majority of respondents in this study were women (66%), companies and businesses aged in the range of 5-10 years (41%), MSMEs in the culinary sector in this study were micro-scale (91%), the number of workers owned was less than 5 (43%), the number of types of products produced was under 5 (57%), and the age of the workforce is in the age range of 21-25 years (44%).

Table 1. Characteristics of respondents.

No.	Characteristics	Criteria	Frequency	Percentage %
1	Gender	Man	34	34%
		Woman	66	66%
2	Business age	< 5 years	27	27%
		5 – 10 years	41	41%
		11 – 15 years	17	17%
		16 – 20 years	13	13%
		> 20 years	2	2%
3	MSMEs scale	Micro business	91	91%
		Small	9	9%
		Medium	0	0%
4	Total employees	< 5 persons	43	43%
		5 – 10 persons	36	36%
		11 – 15 persons	10	10%
		16 – 20 persons	7	7%
		21 – 25 persons	4	4%
		> 25 persons	0	0%
5	Number of product types	< 5 variety	57	67%
		6 – 10 variety	30	29%
		11 – 15 variety	13	4%
		16 – 20 variety	0	0%
		> 20 variety	0	0%

### 4.2. Validity and Reliability Test

Based on the results of calculations with the SPSS program, validity and reliability tests can be presented in the following table:

Table 2. Result of validity and reliability test.

No.	Variables	Corrected item – total correlation		Cronbach's $\alpha$	Description
		Min.	Max.		
1	Knowledge sharing (X)	0.696	0.820	0.936	Valid reliable
2	Technological innovation capabilities (Y1)	0.840	0.821	0.960	Valid reliable
3	Competitive advantage (Y2)	0.743	0.795	0.927	Valid reliable

According to the previous Table 2, it was discovered that all observed indicators are acceptable because the  $r_{count} > r_{table}$  (0.199). This data displays that the indicators are feasible to be expended as indicators of constructs. Alpha has a score bigger than 0.60; therefore, it can be clarified that the variables of knowledge sharing, competitive advantage, and technological innovation capabilities are valid and/or guaranteed to be consistent, so they have the accuracy to be used as a construct in a study.

4.3. Path Analysis

In this study, testing was carried out using path analysis. The following is the design of research drawings in the calculation of path analysis with model I equation analysis and model II equation analysis, namely:

4.4. Model Equation Analysis I

Sub-structural equation analysis was carried out to determine the influence of knowledge sharing on technological innovation capabilities. In this analysis, this research employs the following equation:

$$Y_1 = \rho_{xy_1x} X + \varepsilon_1$$

Table 3. Knowledge sharing regression results on technological innovation capabilities.

Coefficients						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	4.610	3.804		1.212	0.228
	Knowledge sharing	1.375	0.074	0.883	18.641	0.000

Note: a. Dependent variable: Technological innovation capabilities.

Based on Table 3, it is discovered that the knowledge sharing variable (X) has a Sig value. of 0.000. This shows that knowledge sharing has an effect on technological innovation capabilities. The magnitude of the Beta of knowledge sharing (X) to technological innovation capabilities (Y1) is 0.883 ( $\rho_{xy_1x}$ ).

Table 4. Coefficient of determination (R<sup>2</sup>).

Model summary				
Model	R	R square	Adjusted R square	Std. Error of the estimate
1	0.883 <sup>a</sup>	0.780	0.778	5.605

Note: a. Predictors: (Constant), Knowledge sharing.

Based on Table 4 Model Summary above, it can be concluded that the R Square value (R<sup>2</sup>) for the influence of the technological innovation capabilities variable can be explained by the knowledge sharing variable variation of 0.778 = 77.8%, while the error terms ( $\varepsilon$ ), which are an element of the technological variable variation innovation capabilities, cannot be explained by the knowledge sharing quality variable, which is equal to:

$$\begin{aligned} \varepsilon_1 &= \sqrt{1 - R^2} \\ &= \sqrt{1 - 0,0778} = 0,471 \end{aligned}$$

From these tests, the analysis of the model I equation is obtained as follows:

$$\begin{aligned} Y_1 &= \rho_{xy_1x} X + \varepsilon_1 \\ Y_1 &= 0,883 X + 0,471 \end{aligned}$$

This formula explains the relationship between knowledge sharing (X) and technological innovation capabilities (Y1). Based on the significance test, the knowledge sharing variable (X) has an effect on technological innovation capabilities (Y1), with a Beta value of 0.272, which shows the degree of the influence of the knowledge sharing variable (X) on technological innovation capabilities (Y1). Thus, knowledge sharing has an 88.3% influence on the level of technological innovation capabilities.

4.5. Model Equation Analysis II

Model II equation analysis was carried out to determine the effect of the independent variable on the dependent variable. In this regression analysis, using the model equation, namely:

$$Y_2 = \rho_{xy_2} X + \rho_{y_1y_2} Y_1 + \varepsilon_2$$

Table 5 shows that the knowledge sharing variable (X) has a Sig value of 0.007. As it is associated with  $\alpha = 0.05$ , the value of Sig. <  $\alpha$  value (0.007 < 0.05). Thus, Ho is rejected, and Ha is accepted. This demonstrates that knowledge

sharing has an influence on competitive advantage. The magnitude of the Beta (path coefficient) of the knowledge sharing variable (X) on competitive advantage (Y2) is 0.245. Moreover, it is found that the technological innovation capabilities (Y1) variable has a Sig value of 0.000. Once linked with  $\alpha = 0.05$ , the value of Sig. <  $\alpha$  value (0.000 < 0.05). This displays that technological innovation capabilities have an impact on competitive advantage. The magnitude of the path coefficient of the technological innovation capabilities (Y1) variable on competitive advantage (Y2) is 0.688.

Table 5. Regression results of knowledge sharing and technological innovation capabilities on competitive advantage.

Coefficients						
Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	0.239	1.833		0.130	0.897
	Knowledge sharing	0.206	0.075	0.245	2.743	0.007
	Technological innovation capabilities	0.373	0.048	0.688	7.718	0.000

Note: a. Dependent variable: Competitive advantage.

Table 6. Coefficient of determination (R<sup>2</sup>).

Model summary				
Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.911 <sup>a</sup>	0.830	0.827	2.681

Note: a. Predictors: (Constant), technological innovation capabilities, knowledge sharing.

Based on Table 6, it can be seen that the extent of R Square (R<sup>2</sup>) is 0.827, or 82.7%. That is, the variation in the competitive advantage variable (Y2) can be explained by the knowledge sharing variable and technological innovation capabilities of 82.7%, while the error terms ( $\epsilon$ ), which are an amount of the competitive advantage variation, cannot be described by the knowledge sharing and technological innovation capabilities, namely:

$$\begin{aligned} \epsilon_2 &= \sqrt{1 - R^2} \\ &= \sqrt{1 - 0,827} \\ &= 0,415. \end{aligned}$$

From this test, the model II equation is obtained as follows:

$$\begin{aligned} Y_2 &= \rho_{x y_2} X + \rho_{y_1 y_2} y_1 + \epsilon_2 \\ Y_2 &= 0,245 X + 0,688 y_1 + 0,415 \end{aligned}$$

The abovementioned formula illustrates the contributing influence of knowledge sharing (X) and technological innovation capabilities (Y1) on competitive advantage (Y2). Based on the significance test, the knowledge sharing variable (X) has an effect on competitive advantage (Y2) because the knowledge sharing variable (X) has a Sig value. < 0.05, so H<sub>0</sub> is rejected and H<sub>a</sub> is accepted.

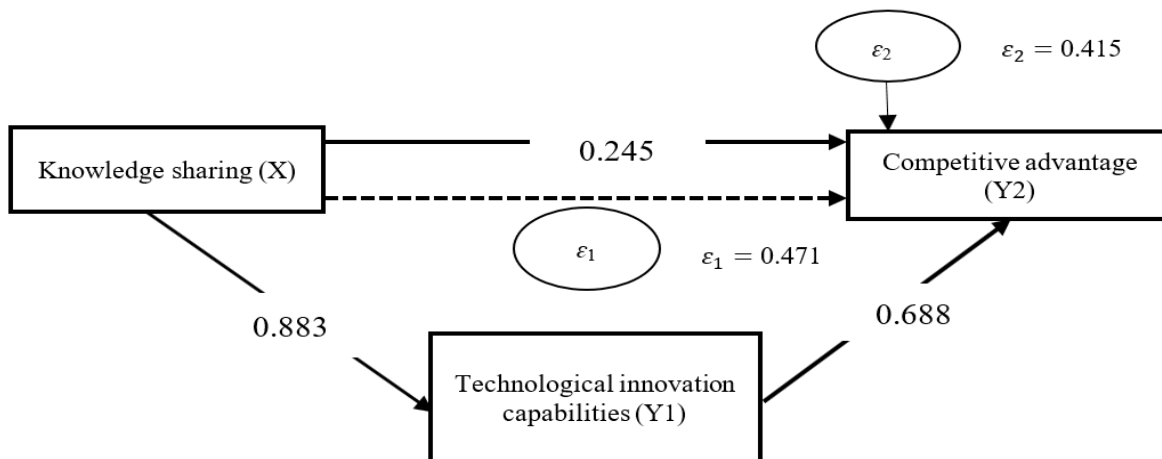


Figure 2. Equation path analysis design.



Figure 2 depicts the equation path analysis design. From Figure 2, it can be seen that the value of 0.245 shows the degree of the impact of the knowledge sharing variable (X) on competitive advantage (Y2). The technological innovation capabilities (Y1) variable influences competitive advantage (Y2) because if the technological innovation capabilities (Y1) < 0.05, then Ha is accepted and Ho is rejected. The value of 0.688 implies the influence of the technological innovation capabilities (Y1) variable on competitive advantage (Y2). So, thus, the level of competitive advantage is influenced by knowledge sharing and technological innovation capabilities 82.7%.

To discover whether there is a mediating effect of knowledge sharing on competitive advantage, the Sobel Test formula is used:

$$Z_{value} = \frac{a \times b}{\sqrt{(a^2 \times Seb^2) + (b^2 \times Sea^2)}}$$

To figure out what the mediating result means, we need to do two regressions. The first regression of the knowledge sharing variable (X) on the technological innovation capabilities variable (Y1) gives us coefficient a. The second regression of the technological innovation capabilities variable (Y1) on the competitive advantage variable (Y2) gives us coefficient b. Based on the analysis of the model I equation, the coefficient a is 0.883 with a standard error (Sea) of 0.074. The coefficient b is 0.688, with a standard error (Seb) of 0.048. Thus, the results of the mediation significance test are:

$$\begin{aligned} Z_{value} &= \frac{0,883 \times 0,688}{\sqrt{(0,883^2 \times 0,074^2) + (0,688^2 \times 0,048^2)}} \\ &= \frac{0,607}{0,073} \\ &= 8,321. \end{aligned}$$

A t-value of 8.321 was obtained, which was greater than the t-table value of 1.660. Because the t-value is greater than the t-table, it can be argued that the mediating effect (H4) is that technological innovation capabilities mediate the effect of knowledge sharing.

## 5. DISCUSSION

Based on the results of the data analysis in this study, it appears that:

### 5.1. Effect of Knowledge Sharing on Technological Innovation Capabilities

The results of the data analysis regarding knowledge sharing depict that knowledge sharing has an impact on technological innovation capabilities, which means that the better the knowledge sharing, the better the technological innovation capabilities. According to the results of the analysis, it can be admitted that the value of Sig., the effect of knowledge sharing on technological innovation capabilities, is 0.000 with a beta coefficient of 0.883. It's safe to say that these results can be accepted because the coefficients show that the knowledge sharing variable has a significant effect on technological innovation abilities. This is because the significance level is above 0.05.

In terms of the employee's skill level, which is of course different for each problem, it is not yet fully open in the problem-solving process because employee involvement in problem-solving is still of a general nature and not applicable. Employees' willingness to share knowledge and actively consult with colleagues to learn about their knowledge and expertise will increase the employee's technological innovation capabilities (Ganguly et al., 2019; Yao, Crupi, Di Minin, & Zhang, 2020).

Knowledge sharing is an essential factor in organizations to improve their innovation capabilities and is a fundamental tool to accomplish competitive advantage. Knowledge sharing among employees inside the organization will generate new ideas for developing product innovation and process innovation (Ode & Ayavoo, 2020; Seo & Kim, 2020).



### 5.2. Effect of Knowledge Sharing on Competitive Advantage

The findings serve as evidence for the analysis of information sharing's effects on competitive advantage. One could argue that the competitive advantage will increase with the quality of knowledge sharing. The research's findings indicate that the knowledge sharing variable's effect on technological innovation skills has a 0.007 degree of significance and a beta coefficient of 0.245. Since the variable satisfies the requirements above 0.05 for Sig., the coefficient results provide proof that the information sharing variable's influence on competitive advantage is reasonable, and these findings can be deemed acceptable.

The strategy to increase competitive advantage in the organization is through knowledge sharing. Knowledge sharing is a key factor in organizations increasing their innovation capabilities and is an important tool to achieve competitive advantage (Arsawan et al., 2020; Azeem et al., 2021). The willingness of employees to communicate their knowledge, skills, and expertise to other employees and actively consult with their colleagues to learn about their knowledge and skills will have a positive impact on work efficiency and effectiveness (Aswar, Burhanuddin, & Latiep, 2020; Haeruddin et al., 2022).

There is low awareness among employees about the importance of the knowledge that has value, so it needs to be shared with other employees or units. In addition, what hinders knowledge sharing is the attitude that knowledge is power and power is not to be shared, so this attitude encourages members of the organization to retain their knowledge for others. When one of these strategies is able to maximize their competitive advantage, MSMEs are then required to consider and improve this (Aswar et al., 2020; Horng, Liu, Chou, Yu, & Hu, 2022).

### 5.3. Effect of Technological Innovation Capabilities on Competitive Advantage

The results of the analysis of technological innovation capabilities show that technological innovation capabilities have an influence on competitive advantage, which means that the better technological innovation capabilities one has, the better technological innovation capabilities will be. According to the results of the analysis, it was discovered that the effect of the variable technological innovation capabilities on competitive advantage is 0.000 with a beta coefficient of 0.688. These results show that the knowledge sharing variable has a significant effect on technological innovation abilities. Since the Sig. value is above 0.05, these results can be accepted (Aswar et al., 2020; Ismail, Haeruddin, Mustafa, & Khatmi, 2023). Research and development (R&D) constitute key components in the process of innovating and introducing novel products or services within an organisation. Particularly when aiming to establish a competitive edge over other entities. Continuous innovation is crucial for companies and small businesses to maintain a competitive edge over their rivals. Organizations that have a good ability to innovate and have intellectual capital will have a higher ability to compete (Singh et al., 2021). Later on, MSMEs would enjoy strong competitive positioning if they were able to adopt technological innovation (Kurniasari, Gunawan, & Utomo, 2022). Because the better the innovation capability of the organization, the more innovative the products it produces will be, the value of the products provided to consumers will be higher, and the level of differentiation given will be even higher. Therefore, the higher the innovation capability of an organization, the greater its competitive advantage with good internal resources (Danso et al., 2019).

### 5.4. Effect of Knowledge Sharing on Competitive Advantage through Technological Innovation Capabilities

To test the fourth hypothesis (H4), the Sobel test was used to find out how much knowledge sharing affects MSMEs in the culinary sector in Makassar city's ability to gain a competitive edge through technological innovation. From the results of these calculations, the t-value calculation results obtained are 8.321, which is bigger than the t-table value of 1.660. The technological innovation capabilities variable is shown to be mediating because the t-value is greater than the t-table. This means that the technological innovation capabilities variable acts as a bridge between the knowledge sharing effect and the competitive advantage effect. The willingness of employees to contribute knowledge will increase the technological innovation capabilities of these employees. Knowledge sharing is a key

factor in organizations increasing their innovation capabilities and is an important tool to achieve competitive advantage (Horng et al., 2022; Yao et al., 2020). In actuality, the MSME's appreciate and emphasizes tasks that require developing original solutions as a challenge (Bahari et al., 2023). The meaning of this finding is that indirectly, knowledge sharing has an influence on competitive advantage through technological innovation capabilities in culinary sector MSMEs in the city of Makassar (Araujo, Priadana, Paramarta, & Sunarsi, 2021).

## 6. CONCLUSION

Based on the results and discussion, it can be concluded that 1) knowledge sharing has an effect on technological innovation capabilities in culinary sector MSMEs in Makassar city, 2) knowledge sharing has an effect on competitive advantage on culinary sector MSMEs in Makassar city, 3) technological innovation capabilities have an effect on competitive advantage in the culinary sector MSMEs in the city of Makassar, and 4) knowledge sharing has an effect on competitive advantage through technological innovation capabilities in the culinary sector MSMEs in Makassar city, which shows that the higher the knowledge sharing, the higher the competitive advantage through technological innovation capabilities.

## 7. IMPLICATIONS

It is suggested that the MSMEs in the culinary sector in the city of Makassar need to implement a knowledge strategy within the company or business, especially in meeting knowledge needs and channeling knowledge within the organization itself, because it overcomes knowledge sharing barriers in terms of social dilemmas and knowledge itself. In addition, organizations need to instill value in someone's knowledge so that people who have shared their knowledge should not be neglected after passing on their knowledge. In terms of their relation to technological innovation capabilities, MSMEs in the culinary sector in the city of Makassar have their own challenges in managing their businesses. Companies have limitations in using and implementing the use of technology, especially MSMEs that are micro in nature and are still pioneering. This includes limited access to capital, a lack of training, social networks, and research and development activities. Improvements are not only carried out by the company, but government support and assistance are also needed. Thus, MSMEs in the culinary sector in the city of Makassar have increasingly adequate technological innovation capabilities, always innovating and utilizing technology so they can compete in the domestic market.

## 8. LIMITATIONS AND FUTURE RESEARCH

Although this study has made contributions to understanding the impact of knowledge sharing and technological innovation capabilities in order to strengthen the competitive advantages of MSME's in the culinary sector, several limitations should be addressed. The first limitation relates to a possible sample bias. With regard to representativeness, the sample was limited to particular MSME's in Makassar city. Nevertheless, the results of the current study are generalizable to the Indonesian context. In order to grasp a comprehensive understanding, future research may benefit from a qualitative approach.

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**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

**Data Availability Statement:** The corresponding author can provide the supporting data of this study upon a reasonable request.

**Competing Interests:** The authors declare that they have no competing interests.

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