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The Effect Of Knowledge Creation On The Competitiveness Of Msmes In The Sigerhub Business Incubator Bandar Lampung Through Innovation As A Mediating Variable

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abstract

This study aims to analyze the effect of Knowledge Creation on the competitiveness of MSMEs participating in the SigerHub Business Incubator in Bandar Lampung and to examine the mediating role of innovation. The research employs an associative quantitative approach, with primary data collected through questionnaires administered to 130 MSME owners/managers under SigerHub's incubation. Validity was tested using factor loading (>0.7) and AVE (>0.5), while reliability was measured using Cronbach's Alpha (>0.7). Data were analyzed using SmartPLS SEM (Structural Equation Modeling), and hypothesis testing was conducted through bootstrapping. The results show that Knowledge Creation has a positive and significant effect on MSME competitiveness, and Innovation positively and significantly mediates the relationship between Knowledge Creation and Competitiveness. These findings indicate that knowledge creation through socialization, externalization, combination, and internalization can accelerate product/process innovation, thereby enhancing MSME profitability and productivity. Practically, MSMEs are encouraged to strengthen knowledge creation processes through training, knowledge-based SOPs, and collaboration. SigerHub is advised to enhance innovation development programs, while the government is expected to expand technological and financial support.

Keywords:Knowledge Creation, Innovation, MSME Competitiveness, SigerHub Business Incubator, Resource Based View Theory, MSME Industry

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in driving national economic growth and accelerating regional economic development in Indonesia (Salsabila & Lubis, 2025). MSMEs are the backbone of the national economy, contributing over 60% to the Gross Domestic Product (GDP) and employing approximately 97% of the national workforce (Coordinating Ministry for Economic Affairs of the Republic of Indonesia, 2025).

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In the regional context, Lampung Province has great potential for developing MSMEs spread across various sectors such as agriculture, fisheries, creative industries, and trade. Local governments have made various efforts to support MSMEs thru training, funding, and digital marketing facilitation (Setyawati et al., 2016). However, the increase in the number of MSMEs has not been fully accompanied by an increase in competitiveness, so MSMEs in Lampung still face challenges in competing at both the local and national levels (Tambunan, 2021).

Bandar Lampung City, as the provincial capital, plays an important role in the development of MSMEs. According to data from the Bandar Lampung City Cooperative and MSME Service (2023), there are over 150,000 active MSMEs spread across various business sectors. Although the number of MSMEs continues to increase, the competitiveness of most business owners remains relatively low, necessitating sustainable strengthening strategies to enhance the ability of MSMEs to face increasingly fierce business competition. The concept of knowledge creation introduced by Nonaka and Takeuchi emphasizes the importance of the knowledge creation process thru socialization, externalization, combination, and internalization (SECI). In the context of MSMEs, knowledge creation becomes the main foundation for driving innovation, improving product quality, business process efficiency, and adapting to market changes (Nonaka & Toyama, 2003).

One strategic effort to promote knowledge creation and innovation in MSMEs is thru business incubators. The SigerHub Business Incubator in Bandar Lampung serves as a facilitator, providing training, mentoring, network access, and collaborative space for its mentored SMEs (Bruneel et al., 2018). Nevertheless, the SigerHub annual report (2023). shows that only about 35% of mentored MSMEs are able to optimally utilize their competitive potential. This indicates that there is still a gap in the utilization of knowledge creation and innovation as drivers of MSME competitiveness. Based on these conditions, this research is important to empirically analyze the influence of knowledge creation on the competitiveness of MSMEs that are members of the SigerHub Business Incubator in Bandar Lampung. This research is expected to contribute academically to the development of knowledge-based MSME literature and to provide practical input for incubator managers and local governments in formulating sustainable MSME development policies.

LITERATURE REVIEW

Knowledge Creation

Mitchell and Boyle (2010) define knowledge creation as an organizational process of generating new knowledge thru continuous learning and the utilization of existing knowledge. According to Taneo et al. (2019), knowledge creation consists of four main indicators known as the SECI model, namely:

a. Socialization
b. Externalization

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c. Combination
d. Internalization

Competitiveness

According to Porter (2012), competitiveness is a company's ability to face various existing environments.

According to (Hutahayan & Yufra, 2019), there are two indicators of competitiveness, namely:

a. *Profitability*
b. Productivity

Innovation

According to the OECD (2005), innovation is not limited to the discovery of new technologies, but also includes the application of new and significant ideas in business practice.

According to Hutahayan et al. (2019), there are 3 indicators of innovation, namely: a. Realizing innovation ideas faster than the planned schedule
b. Launching new products to market according to plan
c. Innovating faster than before

Business

According to (Wijoyo & Ariyanto, 2021), business is an organization that produces or sells goods and services to make a profit. They emphasize that business involves a series of activities carried out by individuals or groups to produce, distribute, and sell products in order to achieve profit.

IMPLEMENTATION METHOD

Types of Data

This study used all Micro, Small, and Medium Enterprises (MSMEs) members of the SigerHub Business Incubator in Bandar Lampung. Data for this study were obtained from two sources: primary and secondary data. For scoring, the researcher used a Likert scale. The population in this study consisted of 190 MSMEs, which set a maximum sample size of 130 respondents. The sampling technique used was non-probability sampling with a convenience sampling approach.

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Evaluasi Model

1. Responses to *Knowledge Formation*

The responses from the respondents regarding *Knowledge Creation*, collected thru a questionnaire measuring 4 statements from Micro, Small, and Medium Enterprises (MSMEs) affiliated with the SigerHub Business Incubator in Bandar Lampung, are as follows:

Tabel 1. List of Responses to *Knowledge Creatio*

No	Statement	Number of Respondents	Mean
1	By implementing innovation, we create new knowledge in our business.	130	4,19
2	By realising innovation, we can share knowledge with employees or business partners	130	4,38
3	By creating new knowledge, our business has added value	130	4,33
4	By creating new knowledge, our business has better procedures / SOP	130	4,33
Total			4,30

Based on Table 1, the analysis of respondents' responses regarding the Knowledge Creation variable shows that the overall average score is 4.30, indicating that the knowledge creation process in the MSMEs in this study is considered very good. Overall, these results emphasize the need to improve the application of Knowledge Creation outcomes, not just sharing or documentation.

2. Response to Competitiveness

The following are the respondents' responses regarding competitiveness, collected through a questionnaire measuring six statements from micro, small and medium enterprises (MSMEs) affiliated with the SigerHub Business Incubator in Bandar Lampung, with the following results:

Table 2. List of Responses to Innovation

No	Statement	Number of Respondents	Mean
1	My efforts to realise innovative ideas faster than planned	130	4,28
2	My efforts to launch new products to market according to plan	130	4,25

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3	My efforts to innovate products faster than before	130	4,37
Total			4,30

Based on Table 2, the results of the analysis of respondents' responses to the Innovation variable show that the overall average score reached 4.30, indicating that the innovation capabilities of MSMEs in this study were considered very good. This score reflects the respondents' positive assessment of business actors' efforts to develop new ideas and adapt business strategies to market conditions.

Of the three indicators used, the highest score was obtained on the innovation indicator, indicating that respondents assessed SMEs as being able to accelerate the innovation process compared to the previous period, both in product development and service improvement.

Table 3. List of Responses Regarding Competitiveness

No	Statement	Number of Respondents	Mean
1	With innovation, my business profits have increased.	130	4,37
2	With innovation, my business capital has increased.	130	4,36
3	With innovation, the value of my business assets has increased.	130	4,34
4	My business has achieved its expected production targets.	130	4,30
5	My business has been able to increase production compared to before.	130	3,90
6	My business is able to offer products with quality that exceeds customer expectations.	130	4,01
Total			4,21

Based on Table 3, the results of the analysis of respondents' responses to the Competitiveness variable show that the overall average score is 4.21, which indicates that the MSMEs in this study are considered to have good competitiveness. This score reflects the respondents' positive view of the business's capacity to maintain its position in the market and face competition.

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Tabel 4. Daftar Respon Terhadap Inovasi

No	Statement	Number of Respondents	Mean
1	My efforts to realise innovative ideas faster than planned.	130	4,28
2	My efforts to launch new products to the market according to plan.	130	4,25
3	My efforts to innovate products faster than before.	130	4,37
Total			4,30

Based on Table 4, the analysis of respondents' responses to the Innovation variable shows that the overall average score reached 4.30, indicating that the innovation capabilities of MSMEs in this study were considered very good. This score reflects the respondents' positive assessment of business actors' efforts to develop new ideas and adapt business strategies to market conditions.

Outer Model

Outer Loading is a measurement model that links indicators to their latent variables and is used to assess the validity and reliability of the model. Validity testing consists of convergent validity and discriminant validity. Reliability testing is expressed through the calculation of composite reliability values and Cronbach's Alpha values.

Table 5. Recapitulation of Validity Test Results

Variabel	Indikator	*Outer Loading*	Deskripsi
Knowledge Creation (X)	X1	0,836	Valid
	X2	0,776	Valid
	X3	0,779	Valid
	X4	0,798	Valid
Competitiveness (Y)	Y1	0,767	Valid
	Y2	0,740	Valid
	Y3	0,782	Valid
	Y4	0,762	Valid
	Y5	0,744	Valid
	Y6	0,772	Valid
Innovation (Z)	Z1	0,874	Valid
	Z2	0,884	Valid
	Z3	0,893	Valid

Sumber: Proses data 5. pada *Software* Smart PLS 3, 2025

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Table 5 shows that each indicator of the research variable has an Outer Loading value > 0.7. The above data indicates that there are no indicators with an Outer Loading value < 0.7, which indicates that all indicators are considered appropriate or valid.

Discriminant Validity

Table 6. Recapitulation of Validity Test Results

Variable	AVE
Knowledge Creation	0,636
Competitiveness	0,580
Innovation	0,781

Sumber: Proses data 4.1 pada *Software* Smart PLS 3, 2025

Discriminant validity can be assessed through Average Variance Extracted (AVE), with the criterion that a good AVE value is usually indicated if it is above 0.5. Therefore, it can be concluded that each variable shows good discriminant validity.

Reliability Test

Table 7. Results of the Research Variable Reliability Test

Variabel	*Composite Reability*	*Cronbach Alpha*	Deskripsi
Knowledge Creation	0,875	0,811	Realiabel
Translation	0,892	0,855	Realiabel
Competitiveness (Y)	0,915	0,860	Realiabel

Sumber: Proses data 7. pada *Software* Smart PLS 3, 2025

The data in Table 7. shows that the Cronbach alpha value exceeds 0.6. These results indicate that each variable has met the criteria and therefore, it can be concluded that all variables show a high level of reliability exceeding the minimum threshold required.

Results of Simple Linear Regression Test and Partial Test (T-test)
Simple Linear Regression Test

Table 7. Results of Simple Linear Regression Test

	Original sample (O)	***P values***	**Hypothesis Conclusion**
KK -> DS	0,516	0,000	Supported
KK -> I -> DS	0,516	0,000	Supported

Source: Research Data Processing, 2025

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1.) Based on the test results, the Knowledge Creation variable has a positive effect on the Competitiveness of MSMEs with a path coefficient value of 0.516 and a p-value of 0.000. The p-value is below the threshold of 0.05, indicating a significant effect. Thus, the hypothesis that Knowledge Creation affects the Competitiveness of MSMEs is supported.
2.) The test results show that the effect of Knowledge Creation on the Competitiveness of MSMEs through Innovation also has a path coefficient value of 0.516 with a p-value of 0.000. A p-value value well below 0.05 indicates a statistically significant relationship. Therefore, the hypothesis regarding the effect of Knowledge Creation on the Competitiveness of MSMEs through Innovation is supported.

DISCUSSION

1. The Influence of *Brand Image* on Customer Satisfaction

The test results show that knowledge creation has a positive and significant effect on the competitiveness of MSMEs participating in the SigerHub Business Incubator in Bandar Lampung. This finding indicates that the ability of MSMEs to create, manage, and disseminate new knowledge is a strategic factor in improving operational efficiency, product quality, and competitive advantage in the market. The process of structured knowledge creation, supported by an incubation environment such as mentoring, workshops, and collaboration between business owners, has been proven to accelerate knowledge transfer and improve the performance of MSMEs. In addition to impacting internal aspects, knowledge creation also contributes to strengthening business reputation and expanding markets thru product innovation and the development of more adaptive business models. These findings align with the research by Taneo et al. (2019) and Firmansyah (2024), which emphasizes the crucial role of knowledge creation in enhancing the competitiveness of MSMEs, and supports Nonaka & Takeuchi's theory on the conversion of tacit and explicit knowledge as the primary source of organizational competitive advantage.

2. The Influence of *Brand Equity* on Customer Satisfaction

The results of the study indicate that innovation acts as a positive and significant mediator in the influence of knowledge creation on the competitiveness of MSMEs participating in the SigerHub Business Incubator in Bandar Lampung. These findings show that knowledge creation not only has a direct impact on increasing competitiveness, but also has a stronger effect when that knowledge is implemented in the form of product, service, or business process innovations. Innovation has been proven to play a partial mediating role, confirming that the competitiveness of MSMEs increases optimally when knowledge creation is converted into measurable innovative outputs. The strategic role of the

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SigerHub Business Incubator also strengthens this relationship through the facilitation of learning, mentoring, and collaboration, thereby encouraging MSME actors to process knowledge into value-added innovations. These findings are in line with Firmansyah's (2024) research and Nonaka and Toyama's (2003) theory, which emphasise that the conversion of tacit and explicit knowledge produces innovation as the main mechanism for forming competitive advantage. Thus, innovation becomes a key bridge between knowledge creation and SME competitiveness in the business incubation ecosystem.

CONCLUSION AND RECOMMENDATIONS

Based on the results of the regression analysis, it can be concluded that knowledge creation has a positive and significant influence on the competitiveness of MSMEs participating in the SigerHub Bandar Lampung business incubator. This indicates that higher levels of knowledge creation will impact the competitiveness of MSMEs participating in the SigerHub Bandar Lampung business incubator. Innovation mediates the relationship between knowledge creation and competitiveness. This suggests that higher levels of knowledge creation will influence innovation, which in turn will impact the competitiveness of MSMEs participating in the SigerHub Bandar Lampung business incubator.

Based on these findings and conclusions, the following are recommendations for various parties. Recommendation: The SigerHub Business Incubator and its associated MSMEs, namely the SigerHub Business Incubator, are advised to strengthen knowledge creation through continuous learning and mentoring activities to encourage MSME innovation. Furthermore, expanding partnership networks, strengthening business management, and enhancing intellectual property protection and digital security are needed to support sustainable MSME competitiveness. For future researchers, they can expand the theoretical model by including other mediating or moderating variables such as brand image, customer satisfaction, absorptive capacity, or organizational learning, so that the mechanism of how knowledge creation affects the competitiveness of MSMEs can be explained in more depth.

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