



## Strategies and Innovations for Enhancing Sustainable Performance in SMEs During The 4.0 Digital Business Era

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### Abstract

**Purpose** – This research aimed to examine the impact of business model innovation (BMI), competitive advantage (CA), learning capability (LC), technological capability (TC), and relational capability (RC) on small and medium-sized enterprises (SMEs) sustainable performance (SP). Additionally, the mediating role of LC in the relationship between TC and RC, as well as the SP of SMEs is explored.

**Methodology** – This research uses primary data obtained from a questionnaire completed by 210 respondents. Purpose sampling which focuses on culinary SMEs is adopted, specifically in Batam City, and has been operating for at least 3 years.

**Findings** – The result showed a significant impact of CA, TC, LC, and RC on the SP of SMEs in Batam City. Furthermore, there is no significant influence from BMI, and LC is identified as a mediating factor in the relationship between TC and SP.

**Originality** – The research reports the latest information and analysis related to factors that can help SMEs maintain their SP. These include the absence of the role of BMI and the discovery of the mediating impact of LC and TC on the SP of SMEs.

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## 1. Introduction

COVID-19 pandemic was reported to have negative effects on the health and economic sectors, causing slow growth on a global scale. According to the World Bank's projections, there is anticipated global economic contraction, decreasing from 1.9% to 0.5% in 2023, with a further decline to 2% in 2024. This has also impacted Indonesia, with the projected growth rate decreasing from 5.2% to 5% in 2023 (Anggraeni, 2023). To facilitate economic recovery, collaboration and support from various stakeholders are important. In this context, small and medium-sized enterprises (SMEs) play a crucial role as drivers of the national economy. The significance lies in the ability to absorb 97% of the workforce and contribute to 60.4% of investment integration, making a substantial impact on the improvement of the Indonesian economy (Mariana & Noviyanti, 2022).

Based on BPS (Central Bureau of Statistics) data, 84.20% of SMEs experienced a decrease in revenue or profit and 62.21% witnessed financial problems and financing of business capital (Pusung et al., 2023). In 2022, Riau Islands was calculated to have 146,638 SMEs. There were 75,064, 18,613, 11,783, 18,434, 8,454, 5,262, and 9,028 SMEs in Batam City, Tanjung Pinang

City, Bintan Regency, Karimun Regency, Natuna Regency, Anambas Regency and Lingga Regency, respectively. Therefore, it is very important to develop SMEs to support regional economic growth (MJNews.id, 2023).

Technological advances are one of the factors that can encourage the performance and income of SMEs to improve the Indonesian economy, specifically in the culinary sector. With the development of various platforms that provide online delivery food services, such as Gofood, performance can be increased by 56.8% (Santika, 2023). Sugiarti and Supriyono (2023) also mentioned the importance of the application and ability to use technology to encourage the marketing level of their products. With the application of technology through social media, digital marketing can improve performance.

Besides technology, performance, and competitiveness, SMEs can also be driven by resource factors, such as technological, relational, and learning capabilities to improve performance in competing with others (Salisu & Abu Bakar, 2020). Alfulailah and Soehari (2020) also added that innovation could influence and mediate the influence of entrepreneur orientation and information technology.

In this digital economy era, many challenges from external and internal businesses are faced in competing to maintain market share. External challenges include increased growth, technological transformation, and the risk of global competition. Meanwhile, internal challenges can be in the form of pressure to produce and improve the quality of good products or services. SMEs must focus more on aspects to improve performance and profits, such as quality, price, innovation, and good customer service. These factors can increase competitive advantage to be superior to competitors (Azeem et al., 2021). Even though there is quite a lot of information and journals that analyze the driving factors, there is still a lack of analysis on the sustainable performance of SMEs. This gap prompts an investigation into how and which factors can contribute to the maintenance of sustainable performance, particularly within the culinary sector. Therefore, the effect of Business Model Innovation (BMI), Competitive Advantage (CA), Technological Capability (TC), Learning Capability (LC), and Relational Capability (RC) on the Sustainable Performance (SP) of culinary SMEs is analyzed, specifically in Batam City. This research also adds testing the mediating effect of LC on the relationship between TC, RC, and SP.

## 1.1 Hypothesis and Relationship between Variables

BMI is the most valuable resource in efforts to improve the performance of SMEs (Azeem et al., 2021). This variable has a positive impact on the SP, which will help facilitate survival and competition in the market. Furthermore, BMI can help to achieve profits through improved performance, as well as various benefits from an economic, social, environmental, and operational perspective (Madhavan et al., 2022). This valuable resource is found to have an impact on the performance of SMEs (Autio et al., 2022; Azeem et al., 2021; Dwikat et al., 2022; Guo et al., 2022; Mai et al., 2021; Phangestu et al., 2020; Pusung et al., 2023; Zhang et al., 2023). Cuandra (2021) and Zhou et al. (2023) also stated the significance of the relationship.

**H<sub>1</sub>:** BMI has a positive impact on the SP of SMEs in Batam City

CA is an important key to strategic management for a business because this variable is designed as an effort to achieve value (Azeem et al., 2021). The variable has a positive significant impact on the performance of a business or company (Haseeb et al., 2019; Phangestu et al., 2020; Wang et al., 2023). The superiority of CA is directly proportional to the likelihood of improving performance (Bashir et al., 2022; Pusung et al., 2023; Tufan & Mert, 2023).

**H<sub>2</sub>:** CA has a positive impact on the SP of SMEs in Batam City

TC requires technical capabilities and effectively combines the flow of technology and the mobilization of technological resources. This variable allows companies to identify, obtain, and apply knowledge from outside to develop operational competencies in achieving better performance (Salisu & Abu Bakar, 2020). Jiang et al. (2021) found that TC affected performance. Furthermore, TC was reported to have an impact on SMEs SP (Medeiros Vila Nova & Bitencourt, 2020; Owuori et al., 2020; Valdez-Juárez & Castillo-Vergara, 2021; Wu et al., 2020).

**H<sub>3</sub>:** TC has a positive impact on the SP of SMEs in Batam City

Learning Capability (LC) is one of the important elements in the world of business competition. This concept can also be depicted as a feature and quality of corporate management that focuses on promoting and supporting learning processes. It encompasses resources used to identify employees' training needs, evaluate business activities, and facilitate the transmission of information and knowledge among employees (Salisu & Abu Bakar, 2020). LC is a dynamic and evolving process over time, involving the integration of knowledge acquired by members or employees. An organization or company is required to learn new knowledge and capabilities to drive organizational performance. Effective strategies and learning capabilities enable organizations to maintain competitiveness and sustainable performance (Yusoff et al., 2019). Chen and Zheng (2022) found the performance of companies can benefit from the strengthening impact of LC, with the technological and market environments playing a moderating role. Bekteshi (2019) mentioned the relationship and influence of LC on company performance. This variable was also reported to impact SMEs SP (Bilan et al., 2020; Chen & Zheng, 2022; Hooi, 2021; Omar et al., 2019; Oyewobi et al., 2021; Zgrzywa-Ziemak & Walecka-Jankowska, 2020).

**H<sub>4</sub>:** LC has a positive impact on the SP of SMEs in Batam City

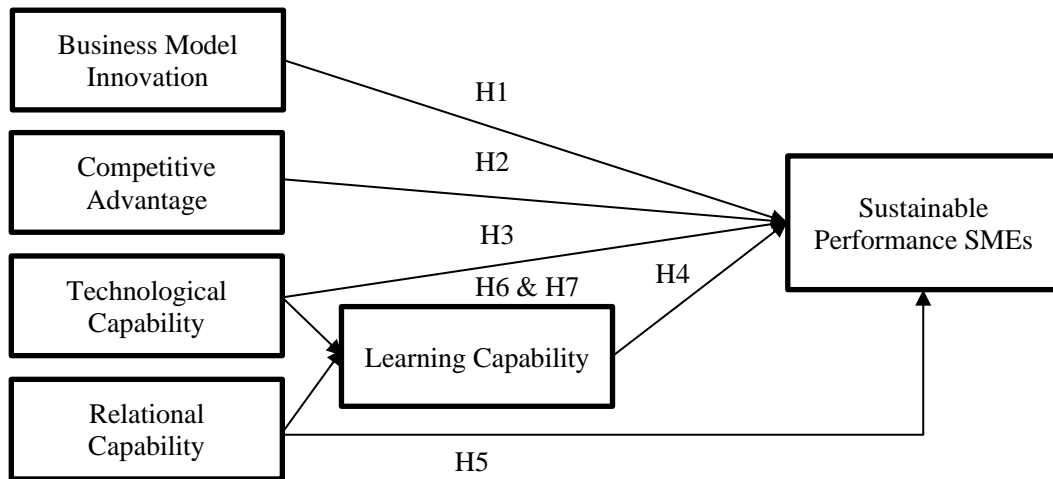
Relational Capabilities (RC) refer to the activities and processes involved in building, managing, and leveraging relationships to gain knowledge. RC can be associated with the ability to encourage interaction and integration between partners or individuals within the structure and network of an organization. When embedded in a company or organization, RC can support the configuration of the ability to create and derive value from networks, as well as support renewal and innovation (Laasonen, 2022). At the enterprise level, RC is driven by trust between individuals, which is influenced by their emotions and feelings. Strategic relationships among employees in a company can lead to a shared understanding and faster dissemination of information. In this context, SMEs can build and develop effective collaborative relationships to acquire new techniques, knowledge, and information (Salisu & Abu Bakar, 2020). According to Ryu et al. (2021), there is a significant relationship between RC of a company and its performance. Pigola et al. (2021) found that knowledge management and partner integration can moderate or strengthen the effect of RC on firm SP in financial terms. Additionally, RC was found to have an impact on SMEs SP (Giraldi et al., 2023; Silva et al., 2023).

**H<sub>5</sub>:** RC has a positive impact on the SP of SMEs in Batam City

Learning Capability (LC) is a qualitative instrument that serves to facilitate the relationship between employees and companies. Organizations with employees who have LC can adopt the latest technology. This is because technological knowledge and information are not easy to spread and apply. Therefore, the role of LC becomes important to improve the performance of employees and SMEs (Chen et al., 2019). Organization learning process and learning capability organization are strongly related to organization learning implementation (Zgrzywa-Ziemak & Walecka-

Jankowska, 2020). Omar et al. (2019) also found the mediating role of LC strengthens the impact of green intellectual capital on business sustainability. The variable was found to mediate the relationship between TC and SMEs SP (Salisu & Abu Bakar, 2020).

**H<sub>6</sub>**: LC mediates the positive effect of TC on the SP of SMEs in Batam City



**Figure 1.** Research Model

Learning Capability (LC) can motivate employees and organizational members, creating an environment that fosters improved performance, creativity, and innovation within the company. Enterprises characterized by strong LC can effectively leverage Technological Capability (TC) and Relational Capability (RC) to attain Competitive Advantage (CA) and superior overall performance. LC has been identified as a mediating factor in the relationship between Relational Capability (RC) and the Sustainable Performance (SP) of Small and Medium-sized Enterprises (SMEs) (Salisu & Abu Bakar, 2020).

**H<sub>7</sub>**: LC mediates the positive effect of RC on the SP of SMEs in Batam City

## 2. Research Methods

This research tested and analyzed the influence of BMI, CA, TC, LC, and RC. The effect of mediation by LC on the relationship between TC and RC variables on the SP was also examined. The population consisted of SMEs in the culinary sector in Batam City and the number of samples was determined using the theory (Hair et al., 2010) 1:5 to obtain at least 205 respondents. Nonetheless, the research questionnaire was disseminated to 210 respondents to mitigate the potential impact of outlier data. A purposive sampling method was employed, with respondents selected based on specific criteria, specifically those located in Batam City, are involved in the culinary sector, and have been in business for at least 3 years. The data collection process utilized likert scale measurements ranging from 1 to 5. In the analysis phase, this study used the smartPLS 3.0 program to perform evaluations using Partial Least Squares (PLS), encompassing both outer and inner model assessments. The outer model test was used to determine the quality of data based on validity and reliability. Valid data must possess an outer loading value  $> 0.6$  (Hair et al., 2016) and average variance extracted (AVE)  $> 0.5$  (Hair et al., 2017). Meanwhile, reliable data must have a Cronbach's alpha value  $> 0.6$  and composite reliability  $> 0.7$  (Hair et al., 2014). The inner model test was used to analyze the direct and indirect impacts between variables. A relationship could be declared to have a direct or indirect effect when the t-statistic value  $> 1.96$  and the p-value  $< 0.05$  (Hair et al., 2017).

### 3. Results and Discussions

#### 3.1 Characteristics of Respondents

The respondents of this research are culinary SMEs located in Batam City. A total of 210 SMEs were successfully obtained as the sample using a questionnaire in the form of Google Forms.

**Table 1.** Respondents Demography

<b>Characteristics</b>	<b>Quality</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	126	60
Female	84	40
<b>Age</b>		
20-29 y.o	111	52.9
30-39 y.o	85	40.5
40-49 y.o	14	6.7
More than 50 y.o	0	0
<b>Education</b>		
Junior High School	0	0
Senior High School	100	47.6
Bachelor	107	51
Master or higher	3	1.4
<b>Position</b>		
Employee	141	67.1
Middle Manager	61	29
Senior Manager	8	3.8
<b>Age of SMEs</b>		
3-6 y.o	198	94.3
6-10 y.o	5	2.4
10-15 y.o	5	2.4
More than 15 y.o	2	1.0

Source: processed data

The respondents consisted of 126 (60%) males and 84 (40%) females. A total of 111 (52.9%) were between aged 20-29 years, 107 (51%) had a bachelor's degree and 141 (67.1%) respondents are employee. Furthermore, 198 (94.3%) SMEs used in this research have been operating for 3-6 years. The majority of respondents in this study were males aged 20-29 years old, had a bachelor's degree, a position as an employee, and the SME where they worked had been operating for 3-6 years.

#### 3.2 Outer Model Test

The validity of a question can be seen when the data has an outer loading value  $> 0.6$ , determining the validity of the research questionnaire questions (Hair et al., 2016). In addition, the Average Variance Extracted (AVE) value must be  $> 0.5$  to be declared valid (Hair et al., 2017). Reliability measurements used an assessment between 0 to 1 concerning the results of Cronbach's alpha and composite reliability. This means that the variable value must be greater than 0.6 and 0.7 to be declared reliable (Hair et al., 2014).

**Table 2.** Validity and Reliability in Outer Model Test

<b>Variables</b>	<b>Item</b>	<b>Outer Loading</b>	<b>AVE</b>	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>
Business Model Innovation	BMI1	0.702	0.537	0.715	0.821
	BMI2	0.781			
	BMI3	0.698			
	BMI4	0.741			
Competitive Advantage	CA1	0.759	0.556	0.797	0.86
	CA2	0.780			
	CA3	0.711			
	CA4	0.746			
	CA5	0.722			
Technological Capability	TC1	0.702	0.533	0.90	0.917
	TC2	0.732			
	TC3	0.789			
	TC4	0.720			
	TC5	0.756			
	TC6	0.729			
	TC7	0.752			
	TC8	0.831			
	TC9	0.816			
	TC10	0.674			
Learning Capability	LC1	0.649	0.551	0.863	0.894
	LC2	0.655			
	LC3	0.851			
	LC4	0.846			
	LC5	0.838			
	LC6	0.810			
	LC7	0.748			
Relational Capability	RC1	0.751	0.609	0.921	0.931
	RC2	0.795			
	RC3	0.703			
	RC4	0.730			
	RC5	0.747			
	RC6	0.748			
	RC7	0.722			
	RC8	0.711			
	RC9	0.735			
Sustainable Performance	SP1	0.695	0.559	0.839	0.882
	SP2	0.748			
	SP3	0.734			
	SP4	0.717			
	SP5	0.738			
	SP6	0.733			

Source: processed data

Test results in Table 2 show that the variables have an outer loading value  $>0.6$  and average variance extracted (AVE)  $> 0.5$ . Furthermore, Cronbach's alpha value and composite reliability

are more than 0.6 ( $>0.6$ ) and 0.7 ( $>0.7$ ). This means that the variables can be declared valid and reliable, and all indicators are used in data processing.

### 3.3 Inner Model Test

The relationship and influence between the variables can be determined through the path coefficient test. An indirect relationship is seen from the specific indirect effect test. A significant relationship has an effect when the conditions of having a t-statistic value  $> 1.96$  and a p-value  $<0.05$  are met (Hair et al., 2017).

**Table 3.** Direct and Indirect Effects in Inner Model Test

Path	Sample Mean	T Statistics ( O/STDEV )	P-values	Hypothesis
H <sub>1</sub> . Business Model Innovation -> Sustainable Performance	-0.021	0.445	0.656	Insignificant
H <sub>2</sub> . Competitive Advantage -> Sustainable Performance	0.347	3.111	0.002	Significant
H <sub>3</sub> . Technological Capability -> Sustainable Performance	0.225	2.197	0.029	Significant
H <sub>4</sub> . Learning Capability -> Sustainable Performance	0.206	2.608	0.009	Significant
H <sub>5</sub> . Relational Capability -> Sustainable Performance	0.255	2.612	0.009	Significant
H <sub>6</sub> . Technological Capability -> Learning Capability -> Sustainable Performance	0.111	2.078	0.038	Significant
H <sub>7</sub> . Relational Capability -> Learning Capability -> Sustainable Performance	0.025	1.463	0.144	Insignificant

Source: processed data

The direct effect can be identified through the testing results and the relationship between BMI variables and SP has a t-statistic value of 0.445 ( $<1.96$ ) with a p-value of 0.656 ( $>0.05$ ) declared insignificant. The relationship between CA and SP has a t-statistic value of 3.111 ( $>1.96$ ) and a p-value of 0.002 ( $<0.05$ ), hence declared significant. The relationship between TC variables and SP has a t-statistic value of 2.197 ( $>1.96$ ) and a p-value of 0.029 ( $<0.05$ ), stated to have a significant effect. The relationship between LC variables and SP has a t-statistic value of 2.608 ( $>1.96$ ) and a p-value of 0.009 ( $<0.05$ ), stated to have a significant effect. The relationship between RC variables and SP has a t-statistic value of 2.612 ( $>1.96$ ) and a p-value of 0.009 ( $<0.05$ ), stated to have a significant effect. There is a mediating effect of LC on the relationship between TC and SP through the specific indirect effect test results. This is shown by the t-statistic value and p-value of the indirect relationship between TC and SP, which are 2.078 ( $<1.96$ ) and 0.038 ( $>0.05$ ), respectively. This figure does meet the provisions, there is an indirect relationship. The t-statistic value and p-value of the indirect relationship between relational capability and sustainable performance are 1.463 ( $>1.96$ ) and 0.144 ( $<0.05$ ). This figure does not meet the provisions since there is no indirect relationship with the absence of mediating impact by learning capability.

The sample mean value in the path coefficient test results demonstrates the significance of the relationship between variables. The significance value of the relationship between BMI and SP is -0.021 ( $<0.05$ ). Meanwhile, the relationship between CA and SP has a significance value of 0.347 ( $>0.05$ ). Additionally, the relationship between LC and SP has a significance value of 0.206 ( $>0.05$ ), and the relationship between RC and SP has a significance value of 0.255 ( $>0.05$ ). Finally, the relationship between TC and SP has a significance value of 0.225 ( $>0.05$ ). The original sample

column's value indicates the type of variable relationship, whether it is positive or negative. The study found that the relationship between BMI and SP is negative (-0.035), while the relationship between variables CA, LC, RC and SP is positive (0.373, 0.217, and 0.238, respectively). Additionally, the study found a positive relationship between TC and SP (0.221).

### 3.4 Adjusted R Square

The results indicate that the learning capability, as the dependent variable, is accounted for by the independent variables within the model at 34.8%, with the remaining 65.2% attributed to external factors. Similarly, sustainable performance, another dependent variable, is explained by the independent variables in the model at a rate of 66.9%, leaving the remaining 33.1% to be explained by other factors. BMI does not significantly impact the SP of SMEs in Batam City. This variable does not necessarily have a positive outcome or impact but improves company performance. Furthermore, CA plays a crucial role in BMI to improve the performance of SMEs (Madhavan et al., 2022). According to Saudi et al. (2019), not all SMEs in Batam City have implemented business model innovation to encourage their business performance. The absence of influence from BMI can also be due to differences in the dimensions adopted in the SP construct. Although Business Model Innovation (BMI) is important, it does not guarantee impressive performance. A thoughtful approach involves analyzing mediating and moderating factors, such as organizational culture, leadership effectiveness, and market conditions. These factors play pivotal roles in determining how well firms can successfully implement BMI and ultimately achieve higher performance (Latifi et al., 2021). This research shows similar results to Madhavan et al. (2022), and Wicaksono et al. (2020). But contrasts Azeem et al. (2021) and Pusung et al. (2023).

**Table 4.** R Square Adjusted in Inner Model Test

Variables	R Adjusted Square
Learning Capability	0.348
Sustainable Performance	0.669

Source: processed data

CA significantly positive impacts the SP of SMEs in Batam City and the advantage of a business is an added value and a driver of performance. The findings indicate a positive influence of competitive advantage on sustainable performance, highlighting a direct proportional relationship between the two. In this context, it is advisable for Small and Medium-sized Enterprises (SMEs) to allocate more resources and concentrate on development efforts to achieve competitive advantage and sustain sustainable performance (Phangestu et al., 2020). Azeem et al. (2021) propose that cultivating a positive group culture and encouraging knowledge sharing can act as catalysts for competitive advantage. Small and Medium-sized Enterprises (SMEs) must maintain a competitive advantage to sustain performance, expand globally, and address societal needs. Furthermore, navigating industry turbulence provides a learning opportunity for SMEs, enabling them to adapt and respond effectively to dynamic challenges (Madhavan et al., 2022). The results show similar results to Bashir et al. (2022), Liao et al. (2023), Pusung et al. (2023), and Tufan and Mert (2023).

TC significantly positive impacts the SP of SMEs in Batam City. Technological capability can be strategically employed to enhance company integration, especially in the context of market competition and an unpredictable business environment (Medeiros Vila Nova & Bitencourt, 2020).



This variable enables Small and Medium-sized Enterprises (SMEs) to recognize, acquire, and apply new external knowledge for the development of competitive advantage and the enhancement of Sustainable Performance. Through effective technological capability, operational systems and services can be tailored to meet customer satisfaction, thereby contributing to overall performance improvement (Salisu & Abu Bakar, 2020). Improving an SME's TC is a vital, long-term commitment that is critical to ensuring survival in the marketplace and future endeavors. TC, along with other SME capabilities, is a decisive determinant in promoting advancements in SME performance Owuori et al. (2020). The results show similar results to Jiang et al. (2021), and Md Hassan and Ibrahim (2022).

LC significantly positive increases competitiveness to encourage the SP of SMEs in Batam City. Companies with a strong learning capability can easily absorb new information and acquire new skills, positioning themselves for effective competition and sustained performance improvement. Openness, experimentation, and managerial commitment are key drivers of business performance within organizational learning capability. These factors have a direct and positive impact on shaping the organization's ability to learn and adapt, ultimately influencing overall performance (Hooi, 2021). This relationship shows that to succeed in a competitive marketplace, organizations must prioritize learning capabilities to foster continuous organizational learning. This approach enables organizations to effectively respond to current and future business challenges, ensuring adaptability and sustained success in a dynamic environment (Yusoff et al., 2019). The results show similar results to Bekteshi (2019), Bilan et al. (2020), Chen and Zheng (2022), and Salisu and Abu Bakar (2020).

RC significantly positive impacts the SP of SMEs in Batam City. This variable represents a company's ability to establish and maintain positive relationships, both internally and externally, while adhering to professional conduct standards. Relational capability is crucial in developing effective collaborations with strategic partners, which contributes to enhancing operational and organizational capabilities Salisu and Abu Bakar (2020). Companies with a strong relational capability not only create value but also realize it within networks and relationships, thereby promoting innovation and enhancing overall performance (Laasonen, 2022). Weak relational capability can lead to confusion, a sense of exclusion, and a lack of cooperation among employees. Therefore, Small and Medium-sized Enterprises (SMEs) must maintain strong relational capabilities to promote effective communication, inclusivity, and collaboration within the organization (Giraldi et al., 2023). The results show similar results to Pigola et al. (2021), Ryu et al. (2021), and Salisu and Abu Bakar (2020).

LC mediates the positive effect of TC on the SP of SMEs in Batam City, showing an indirect effect between the variables. Transferring technological knowledge requires effective acquisition, transformation, assimilation, and exploitation capabilities. The importance of learning capability in enhancing a firm's dynamic capabilities cannot be underestimated. Learning fosters flexibility, increasing the firm's agility in developing operational capabilities (Chen et al., 2019). Furthermore, learning influences environmental factors, contributing to overall performance improvement (Ahmed et al., 2019). The successful implementation of new technologies or experiments requires support from learning capability. A high level of language and communication skills simplifies the process for employees and managers, allowing them to effectively acquire and apply new technologies, thereby improving the overall performance of SMEs. The results show different results from previous research by Salisu and Abu Bakar (2020).

LC does not mediate the effect of relational capability on SP of SMEs in Batam City. The observed phenomenon can be attributed to the influential role of relational capability, which independently elevates the level of sustainable performance without the direct involvement of

learning capability. The absence of influence or impact exerted by learning capability on the sustainable performance of Small and Medium-sized Enterprises (SMEs) is discernible. When relational capability plays a predominant role, it is evident that sustainable performance levels are positively affected. This influence occurs even in the absence of a direct contribution from learning capability within the context of SMEs. The results show different results from previous research by Salisu and Abu Bakar (2020).

#### 4. Conclusions

In conclusion, this research was conducted to show the significant impact of Competitive Advantage (CA), Technological Capability (TC), Learning Capability (LC), and Relational Capability (RC) on the Sustainable Performance (SP) of Small and Medium-sized Enterprises (SMEs) in Batam City but no influence was found from Business Model Innovation (BMI). In this context, LC mediated the indirect relationship between TC on the SP of SMEs. However, the variable did not mediate an indirect relationship between RC with SP. The theoretical implications of the analysis were to provide benefits for entrepreneurs. The analysis of the factors was expected to increase knowledge and direct SMEs to maintain their performance. The managerial implications were related to the importance of TC and RC in improving SP. Therefore, it was recommended that Small and Medium-sized Enterprises (SMEs) used their resources to improve these factors. This research also showed that the level of CA could maintain performance and competitiveness. Unique innovation and authentication were factors required to improve competitive advantage. This research was a scientific work compiled by humans, hence some limitations and imperfections were stated. The results of data processing and analysis only described or reflected the SP of Small and Medium-sized Enterprises (SMEs) in Batam City. Therefore, the results and discussion were not applied and could be different from the analysis in other cities. Several factors should be considered for further research, such as expanding the geography of distributing questionnaires to other regions. Additionally, more information and research journals should be incorporated to add insight and be applied by SME business actors, or other readers. The addition of this information must pay attention to quality and be up to date. Dependent or independent variables such as social capital, knowledge sharing, and organizational culture should also be considered. Further research could add testing of variable relationships, such as the effect of BMI on CA.

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## APPENDIX

**Table 5.** Variable Measurement

Variables	Indicators	Measurement	Source
Business Model Innovation	BMI1	Our Company tries out new ideas.	(Azeem et al., 2021)
	BMI2	Our Company is creative in its methods of operation.	
	BMI3	Innovation is readily accepted in management.	
	BMI4	Our Company encourages and supports innovative activities.	
Competitive Advantage	CA1	The quality of the company's products or services is better than that of the competitor's products or services.	(Azeem et al., 2021)
	CA2	We make great efforts in building a firm brand name.	
	CA3	Manufacturing costs are lower than those of our competitors.	
	CA4	The company has better managerial capability than the competitors	
	CA5	The company's profitability is better than the competitors.	
Technological Capability	TC1	Our company is one of those firms in the industry that establish technology standard.	(Salisu & Abu Bakar, 2020)
	TC2	Our company is one of those firms in our industry to upgrade technology standard.	
	TC3	Our company has superior competitive technology strategy in the industry.	
	TC4	Our company has robust technological skills in several fields of operation.	
	TC5	Our company leads in technology innovation in the industry we operate.	
	TC6	Our company is competent in applying innovative technology to problem solving.	
	TC7	Our company has the monitoring capacity to accurately predict changes in the technological environment.	
	TC8	Our company has strong abilities to integrate internal and external technological resources.	
	TC9	Our firm has the capacity to attract and hire talented experts.	
	TC10	Our company improves technical skills through continuous training programs.	
Learning Capability	LC1	Our company has been encouraging knowledge sharing among employees.	(Salisu & Abu Bakar, 2020)
	LC2	Our company encourages participatory decision making.	
	LC3	Our company's management is committed to effective learning.	
	LC4	Our company is committed to internal dialogue.	
	LC5	Our company encourages experimentation and openness.	
	LC6	Our company always strive toward knowledge transfer.	

Variables	Indicators	Measurement	Source
Relational Capability	LC7	Our company supports new idea from employees.	(Salisu & Abu Bakar, 2020)
	RC1	Our company has the ability to create relationship with new relevant partners.	
	RC2	Our company has the ability to maintain relationship with existing partners.	
	RC3	Our company has the capability to develop mutual trust with strategic partners.	
	RC4	Our company has the capacity to develop mutual goals and commitment with strategic partners.	
	RC5	Our company has the ability to build on the strength of our strategic partners.	
	RC6	Our company has develop the ability to effectively communicate with relevant partners.	
	RC7	Our company has the capacity to engage with partners collectively in problem solving.	
	RC8	Our company has the capacity to achieve target while negotiating with relevant partners.	
Sustainable Performance	RC9	Our company has the capability to achieve win-win with relevant partners.	(Salisu & Abu Bakar, 2020)
	SP1	Over the past 3 years, our company has been recording success.	
	SP2	Our company's profit has improved over the past few years.	
	SP3	Over the past 3 years, our employees satisfactions have improved.	
	SP4	Over the past 3 years, our customer's satisfactions have improved.	
	SP5	Over the last 3 years, our company's social performance has improve significantly.	
	SP6	Over the past 3 years, our company's performance in environmental protection has improved.	

Source: processed data