ANALYSIS OF INNOVATION CAPABILITY AND TECHNOLOGICAL INNOVATION ON THE BUSINESS PERFORMANCE OF SME IN BATAM CITY

Melani Tessa Sitorus[a,*], and Febrina Wulandari[b]
[a]*Managerial Accounting Program, Politeknik Negeri Batam, melanitessaa@gmail.com, Indonesia*
[b]*Managerial Accounting Program, Politeknik Negeri Batam, febrina@polibatam.ac.id, Indonesia*

Abstract. This study attempts to examine how innovation capability and technological innovation affect the business performance of SMEs. because with the increase in competitors which is the biggest challenge for business people, SMEs must improve their quality. This study has 1 dependent variable, namely the performance of SMEs and uses 2 independent variables, namely innovation capability and technological innovation This study uses primary data. This study collected data from 96 respondents from service sector SMEs in Batam City, using purposive sampling. Batam City is an international shipping lane and its strategic location, thus inviting many tourists to visit Batam. Data collection through questionnaires distributed online. Hypothesis testing and multiple regression analysis were used to evaluate the research equipment and show the results of data processing. The results of the data analysis show that the ability to innovate and technological innovation positively and significantly affect the performance of SMEs. SMEs with higher levels of innovation have a greater chance of initiating and sustaining innovative projects. This affects performance, competitive advantage, and overall business operations.

Keywords: innovation capability, technological innovation, smes performance, multiple regression analysis

[*]Corresponding author. E-mail: melanitessas@gmail.com

Introduction

Small and medium-sized enterprises (SMEs) are an important part of the Indonesian economy. However, upon closer examination, most SMEs in Indonesia are unable to compete with large companies and exist in the global market because, in reality, SMEs start their businesses due to economic pressures, not because they have unique products. This situation inevitably leaves most SMEs in Indonesia lacking competitive edge (Pamungkas et al., 2023). Innovation capability is closely tied to technological change and innovation, and involves a company's ability to transform ideas into profit (Chamsuk et al., 2017). Migdadi (2021) it shows that manufacturers who can develop their products and services with more innovation can achieve twice the profits compared to manufacturers who do not. Therefore, some SMEs focus on enhancing their innovation capabilities to strengthen their competitive edge and business sustainability.

The use of digital technology in Indonesia in 2024 continues to increase, with internet penetration reaching 79.5% compared to the previous period, an increase of 66.2% from 2018. This development is driving the growth of the digital economy. Social media is being utilized for marketing, collaboration apps support teamwork, and ride-hailing services like Gojek and Grab are changing how people travel. Transformation is also occurring in payment systems through digital means such as mobile banking and QR codes. The digital transformation offers numerous benefits to SMEs, including lower transaction costs, reduced operational expenses due to the elimination of large purchases of conventional business equipment, more efficient delivery and transactions of goods and services, and the potential to integrate with broader and more interactive markets (Institute for Development of Economics and Finance (INDEF), 2024).

SMEs are growing rapidly in the Riau Islands, especially in Batam, not only having a significant impact on Batam's economy, particularly on the Gross Domestic Product (GDP), but also absorbing labor in Indonesia. As reported by the Ministry of Cooperatives and Small and Medium Enterprises, in 2021, 97 percent of the workforce will be employed, 61.97 percent of the population will be involved in economic activities, and they will contribute Rp 8.6 trillion. With its geographical location, serving as an international shipping route and strategically positioned at the border with Singapore and Malaysia just approximately 20 kilometers from Singapore, Batam has become a hub for business and tourism, attracting both international and local visitors. Recent data shows there are 81,486 SMEs in Batam, the majority of which are SMEs operating in the services sector, producing or marketing goods.

Despite the increase in tourist visits, SMEs in the service sector, especially those related to tourism, still experience significant fluctuations in income depending on the season, and this dependence can make SMEs vulnerable to changes in the number of visits. Additionally, SMEs face obstacles in obtaining capital to expand their businesses. Limited funds can hinder SMEs from innovating and improving service quality, especially when demand increases. With the rise of competitors becoming the biggest challenge for businesses, SMEs must enhance their human resources. Poor service quality can be influenced by a lack of skills and training, so innovation is needed to retain customers in a competitive market. Preliminary surveys indicate that one of the problems faced by SMEs in the service sector is a lack of understanding and utilization of technology and financial management. In terms of human resources, issues arise related to entrepreneurial spirit, including a lack of willingness to continue innovating, consistency, and a willingness to take risks. SMEs that develop innovations gain many benefits. The most significant benefits of innovation are improving customer service (82.03%) and enhancing competitiveness (77.14%). Other benefits that businesses gain from innovation include increasing revenue (75.57%) and reducing costs (58.49%) (Marhaeni, 2022).

Previous studies have shown that innovation capabilities are crucial for SME entrepreneurs if they want to sustain their businesses and become more competitive (Hanaysha et al., 2022). The innovation capabilities referred to in this study involve enhancing employees' skills in technology and innovation, establishing collaborations with other organizations or partnerships, leveraging customer data as a means of innovation, and, of course, allocating budgets for research and development of new products or services. However, the reality is that SME operators often struggle to adapt quickly to digital technology and innovation (Ferreira & Coelho, 2020). Research by Yaakub (2018) also found that innovation, difficulties in technology adoption, and company performance are closely related.Technological innovation in this study refers to improving production equipment by using the latest devices to achieve optimal product or service outcomes, as well as utilizing social media and specialized websites to enhance service systems. Additionally, Izadi Z.D et al., (2020) also support the argument that innovation management capabilities are

crucial for developing new products or services and creating value for consumers. According to research conducted by Sari et al. (2022), environmental factors and innovation capabilities in the SME industry may influence sustainability and innovation. This study is based on research by Setyawati et al. (2023) on the influence of innovation capabilities and technological innovation on business performance in the culinary SME sector in Indonesia, using a sample of 90 SME respondents in the culinary sector in Indonesia, which demonstrated a significant influence between innovation capabilities and technological innovation on SME performance. This study is limited to two independent variables: innovation capabilities measured based on clients, marketing, and technology; and technological innovation measured based on process innovation, product innovation, competitive advantage, as well as complexity and compatibility as variables influencing the sustainability of SME performance in Batam City. The dependent variable is the sustainability of SME performance as the influenced variable. This study is expected to contribute to providing benefits for SME practitioners in managing their businesses by applying innovation capabilities and technological innovation to enhance the sustainability of SME business performance.

Theory and Literature Review

Resource Based View (RBV) *Theory*

The Resource-based View (RBV) theory is known as a theory that looks at a company's internal resource capabilities in exploiting internal resources to create competitive advantages, as proposed by Wernerfelt (1984). As the study shows, how well a company manages its resources and capabilities determines its competitive advantage. The ability of a business to efficiently use its resources is referred to as its capabilities. According to Wernerfelt (1984), a company achieves competitive advantage by possessing strategic assets that are: valuable, meaning that these assets contribute to the company's ability to compete successfully. Then, rare, meaning that they are not widely available to competitors. Furthermore, they are inimitable, meaning that competitors cannot easily replicate them due to factors such as complexity, history, or unique processes.

Resources in this case can be tangible or intangible, such as technology, brands, and reputation. The focus of this research is on intangible resources, which are assets that can create added value for companies to achieve competitive advantage. Innovation, whether in the form of knowledge, technology, or new practices, does not have a physical form that can be seen or touched, and therefore falls under the category of intangible resources. In this study, innovation can take various forms, including new product development, process improvement, or new technology development. Innovation can gain a competitive edge and enhance performance through innovation. Investment in intangible assets, including innovation, has increased significantly in recent years, indicating a shift toward a more knowledge- and technology-based economy.

Literature Review

Adopting technology, SMEs can respond to competitors at a lower cost and communicate information efficiently can affect SME performance. However, Ahmad et al. (2019) argue that social media adoption is relatively unplanned and poorly integrated, which has little impact on business performance. The biggest challenge comes from inadequate budget to invest in new technology. When companies fail to innovate and adopt technology, this is likely to result in a decline in business performance (Yaakub 2018).

According to Guzmán et al. (2019), SMEs' business performance will increase if they embrace and carry out innovation activities. Company performance can be greatly influenced by technological advances, which can change business models, improve sales performance, and drive innovation in other areas (Jin & Choi, 2019). Saunila (2020) also conducted research on the lack of understanding of innovation capabilities in small businesses using the results of a systematic literature review from relevant journals. Based on the findings of this study, it is evident that organizational awareness related to innovative development provides a foundation for companies to maintain competitive advantage. According to the research by Izadi Z.D et al., (2020), innovation management capabilities are crucial for developing new products or services and creating value for consumers. This is related to better performance in generating new ideas and differentiating from competitors. Chege & Wang (2020) also found that technological innovation impacts environmentally friendly choices, which positively affects company performance. Innovation not only generates new customers and market segments but also enables companies to develop a reputation as innovative firms (Ganguly et al., 2020).

A related study mentioned earlier, according to Carrasco-Carvajal and Garciá-Pérez-De-Lema (2021), commitment to learning and taking risks increases innovative capacity. Fang et al. (2022) tested 431 randomly selected SMEs, showing that innovation capabilities improve SME performance when social media adoption is implemented. However, research conducted by Sari et al. (2022) found empirical evidence that MSMEs innovate based on their capabilities and environmental factors. This has a significant positive effect on innovation, both in terms of products and processes. The ability to innovate is crucial for UMKM to improve their operational efficiency and increase their daily productivity, according to Hanaysha et al., (2022).

Hypothesis Development

According to RBV theory, SMEs have a competitive advantage in the face of competition because strong innovation capabilities can be a unique resource and difficult to imitate (Wernerfelt, 1984). One of the resources that can give a competitive edge in this situation is the capacity for innovation. Innovative projects are essential to enhancing a company's performance, operations, and competitive edge, yet they are frequently initiated and maintained by organizations with limited innovation capabilities. (Farida & Setiawan, 2022). In the face of competition, innovation is carried out not only by lowering prices but also through several non-price innovations such as product design, customization, and improving product quality, where these innovations must be carried out faster than competitors. According to research that observes innovation capability, business performance benefits significantly from it (Setyawati et al., 2023). Based on RBV theory and previous research, it can be concluded that there is a relationship between innovation capability and SME performance. Based on these statements, the authors conclude the first hypothesis as follows:

H1: Innovation capability affects SME performance

Technology adoption is also very important for the success of SMEs because it can increase efficiency, innovation, and competitiveness. Based on RBV theory, as one form of resources owned by SMEs, technological innovation has the ability to improve operational efficiency and produce new and better products or services so that performance can be improved (Wernerfelt, 1984). In addition, digital transformation enabled by technologies such as data analytics, cloud computing, and artificial intelligence, offers opportunities for SMEs to innovate and create value. The findings of earlier studies demonstrate that technical innovation significantly impacts corporate performance (Setyawati et al., 2023). Based on arguments from RBV theory and previous research, it can be concluded that technological innovation plays an important role in improving the performance of SMEs. The author concludes the second hypothesis as follows:

H2: Technological innovation affects SME performance

Research methods

The variables used in this study have definitions and indicators shown in the table below:

Table 1
Operational Variables Definition

Variable	Definition & Indicator	Source
Innovation Capability (X1)	The operational definition of innovation capability consists of client, marketing, and technology focused innovation capability, marketing-focused innovation capability, technology focused innovation capability (Chege & Wang, 2020; Mothe & Thi, 2010). The indicator is measured by 5 question items.	(Setyawati, 2023)
Technological Innovation (X2)	The operational definition of technological innovation variables consists of product innovation, process innovation, competitive advantage, complexity, and compatibility (Carvajal, 2021; Yu et al., 2017). The indicator is measured by 10 question items.	(Setyawati, 2023)
SME Performance (Y)	The ability of SMEs to achieve long-term and short-term goals consists of finansial perfomance and non-finansial performance (Felício et al., 2014; Gunday et al., 2011). The indicator is measured by 5 question items.	(Setyawati, 2023)

This study uses a quantitative approach method. The research population of this study is SMEs in the service sector in Batam City. The process of taking this sample will be carried out by applying non-probability sampling method by using purposive sampling approach technique. The respondent criteria used in this study are:

1. Owners or managers of service sector SMEs

2. SMEs that have implemented innovation capabilities and technological innovation as a medium for business advancement
3. SMEs that have financial data on monthly sales profit and loss
4. SMEs that have an information technology system to support the business
5. SMEs that are willing to participate in the research
6. SMEs that have been operating for at least 1 year, and have at least 1 employee.
7. SMEs that use technological payment methods such as transfer and qris

The sample was obtained using the Rao Purba formula because the population was unknown Rao Purba (2006). By using a margin of error of 10% and a confidence level of 95% or z = 1.96

$$n = \frac{1{,}96^2}{4(0{,}10)^2}$$

$$n = \frac{3{,}8416}{0{,}04}$$

$$n = 96{,}04$$

n = sample size
Moe = Margin of error or maximum tolerable error rate
Z = the value obtained by the z table at a certain level of confidence

The calculation results show that the sample size is 96.04. However, to facilitate research, the number of samples was rounded up to 96 respondents.
The researcher carried out data collection using a questionnaire instrument distributed online via google forms. The questionnaire consisted of a set of questions from three study variables measured using a Likert scale.

This study used SPSS version 20 as the analysis tool. Multiple regression analysis was the data analysis technique employed in this investigation. This analysis was conducted to test the established hypothesis. Before testing the hypothesis, the first step was to test the quality of the data obtained to ensure its accuracy. To ensure that the regression model is unbiased, valid, and reliable, validity and reliability tests are followed by classical assumption tests, such as normality, multicollinearity, and heteroscedasticity. Then, multiple linear regression analysis was performed to examine the influence of independent variables on dependent variables and the strength of that influence.

Results and Discussion

Description of Research Samples

The population in this study was SMEs in the service sector in Batam City. Based on the results of the questionnaire distribution, the researchers successfully collected data from 155 respondents, with 116 respondents coming from the service sector in line with the focus of this study. Each respondent represented one business unit. After going through a screening and validation process, 96 respondents were deemed eligible and used in further analysis. The majority of respondents were small business owners with relatively new operational periods of 1-4 years, averaging 1-4 employees, and relatively low income of around Rp50 million-Rp100 million. This reflects the characteristics of businesses in the growth and development stage, which are more open to innovation but may also face challenges in implementing new technologies.

Table 2
Description of Samples Based on Research Criteria

Charateristics of Respondents	Total SME's	Percentage
Position		
Member	14	15%
Owner	59	61%
Manager	8	8%
Manager and owner	15	16%
Operational period		
1-4 years	50	52%
5-10 years	41	43%
>10 years	5	5%
Labor		
1-4 people	50	52%
5-19 people	26	27%
20-50 people	20	21%
Annual income		
<Rp50 million	33	34%
Rp50 - Rp100 million	47	49%
Rp100 million - Rp1 billion	13	14%
Rp1 billion - Rp5 billion	3	3%

Descriptie Statistics

Table 3
Descriptive Statistics

Descriptive Statistics					
	N	Min	Max	Mean	Std. Dev
X1	96	7	25	19.75	3.362
X2	96	10	35	27.86	4.831
Y	96	8	25	20.07	3.784
Valid N (listwise)	96				

Source: Data processed by SPSS 20 (2025)

Based on the results of descriptive statistical tests using SPSS in Table 3, it can be seen that the research sample consisted of 96 subjects. The descriptive test results show the basic characteristics of the three variables tested, namely variable X1 innovation capability, variable X2 technological innovation, and variable Y SME performance. Variable X1 has a value range varying between 7 and 25, with an average of 19.75 and a relatively low standard deviation of 3.362. This indicates that there is considerable variation in the data. Conversely, variable X2 has a value range between 10 and 35, with an average of 27.86 and a standard deviation of 4.831. Furthermore, variable Y has a value range between 8 and 25, with an average of 20.07 and a standard deviation of 3.784. Although this standard deviation indicates significant variation, it is not as much as the variation in variable X2. This means that the SMEs studied generally have fairly good innovation capabilities and performance and are not too different from one another, but in terms of technology use, some SMEs are very innovative while others are less innovative in their use.

Validity and Reliability test

Table 4
Validity Test Result

Variables	Corrected items - Total correlation	N of items	Result
Innovation Capability	0.679	5	Valid
Technological Innovation	0.685	7	Valid
SME Performance	0.693	5	Valid

Source: Data processed by SPSS 20 (2025)

Based on table 4, it shows that the validity test that has been carried out shows that all variable question instruments have a calculated r value> r table value (0.361), so the data is said to be valid and can be used in this study. The measurement items on the questionnaire that detailed the variable indicators were then subjected to a reliability test.

Table 5
Reliability Test Result

Variables	Croanbach's Alpha	N of items	Result
Innovation Capability	0.703	5	Reliabel
Technological Innovation	0.804	7	Reliabel
SME Performance	0.721	5	Reliabel

Source: Data processed by SPSS 20 (2025)

According to table 5's reliability test findings, every variable has a Cronbach Alpha value greater than 0.60. Thus, it may be said that every tool in use are reliable.

Normality test

Table 6
Normality Test Result

	Unstandardized Residual
Asymp.sig:	0.648

Source: Data processed by SPSS 20 (2025)

The Asymp is displayed in the One Sample Kolmogorov-Smirnov test table. The data tends to be normally distributed, as indicated by the sig. (2-tailed) of 0.648, because the Asymp. 2-tailed sig. > 0.05.

Multicollinearity test

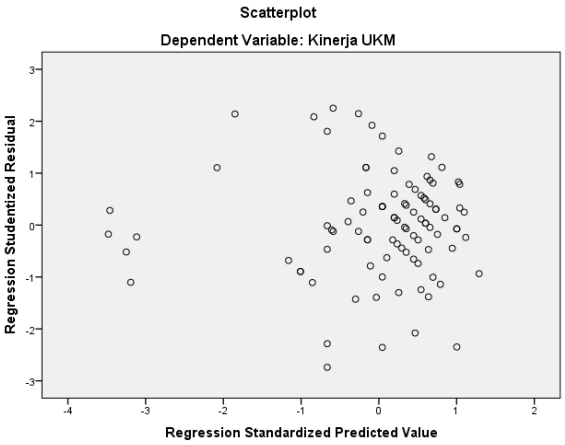
Table 7
Multicollinearity Test Result

	Collinearity Statistics	
Model	Tolerance	VIF
Kapabilitas Inovasi	0.466	2.146
Inovasi Teknologi	0.466	2.146

Source: Data processed by SPSS 20 (2025)

Based on table 7 above, it can be seen that the tolerance value = 0.466 and the VIF value = 2.146. meaning that the tolerance value> 0.10 and VIF <10. Thus it can be concluded that there are no symptoms of multicollinearity between the independent variables.

Heteroscedasticity test



Source: Data processed by SPSS 20 (2025)
Gbr. 1. Scatterplot

The aforementioned scatterplot illustrates how the points are dispersed at random above and below the value 0 on the Y or Studentized Regression Residual axes. There is no discernible pattern to these points. Therefore, it may be said that heteroscedasticity is not present in this regression model.

Multiple Linear Regression Analysis

All variables (independent and dependent) are analyzed and their relationships are predicted using multiple linear regression. The following equation is produced in this study:

Y = 1.101 + 0.295X1 + 0.472X2

The following table shows the results of hypothesis testing:

Table 8
Result of Hypothesis Testing

Hyphotheses	B	Std.Error	Sig.	Result
Constants	1.101	1.445	0.448	
Innovation Capability (X1)	0.295	0.099	0.004	H1 Supported
Technological Innovation (X2)	0.472	0.069	0.000	H2 Supported

Source: Data processed by SPSS 20 (2025)

The regression coefficients for variables X1 and X2 are 0.295 and 0.472, respectively. These values indicate a positive relationship between innovation capability (X1) and technological innovation (X2) and SME performance (Y). This indicates that SME performance (Y) can rise by the regression coefficient's value for each unit increase in the independent variable (X). The performance of SMEs in Batam City's service sector is the dependent variable, and it is positively impacted by all independent variables. This conclusion is supported by the results of the t-test, which show the significance of variables X1 and X2 to be 0.004 and 0.000, respectively, meaning they are below 0.05. Thus, H1 and H2 are supported by Setyawati's research. Therefore, innovation capability and technological innovation significantly influence the performance of SMEs in the service sector in Batam City.

Coefficient of Determination test (R^2)

Table 9
Result of R^2 Test

R	R^2	Adjusted R^2	Std.Error
0.814a	0.662	0.655	2.223

Source: Data processed by SPSS 20 (2025)

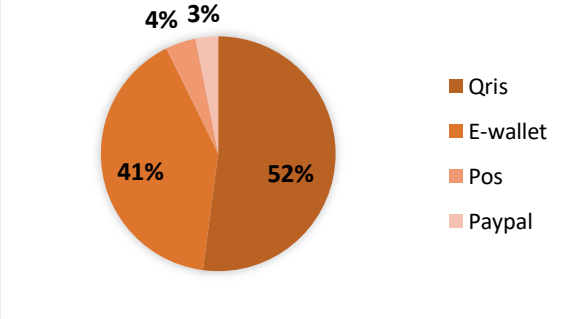
The adjusted R2 value is 0.660, as shown in the table above. This indicates that the independent variables, innovation capability (X1) and technological innovation (X2), have a 66% ability to explain the dependent variable, MSME performance (Y). The remaining 34% is influenced by additional variables not discussed in this study.

Discussion

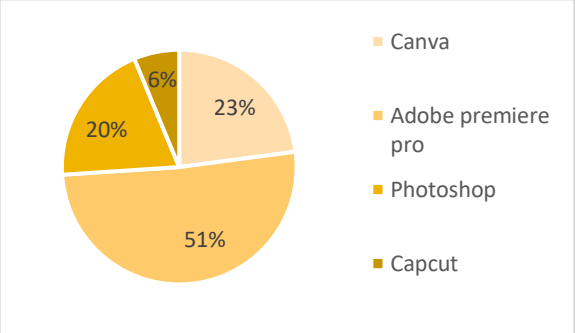
The first hypothesis test demonstrates that innovation capabilities have a favorable impact on SME performance based on the data analysis that has been done. This means that businesses with high innovation capabilities will experience an increase in SME performance. Conversely, businesses with low capabilities will experience a decline in SME performance. In line with the RBV theory, this supports the idea that achieving competitive advantage depends on the application of organizational resources, particularly innovation capabilities. The application of innovation capabilities by business actors can be achieved by improving product and service quality, such as by enhancing production and sales processes using more efficient technology to boost business productivity and

effectiveness. Business actors can also collaborate with other parties by joining business communities or partnering with others to promote products and services, such as new product innovations and branding. In this study, 93% of businesses applied innovation capabilities and experienced a positive impact on SME performance, but 7% did not apply them due to financial constraints. Despite this, business owners still plan to leverage innovation through various ideas to enhance SME performance. The findings of this study align with those of Setyawati et al. (2023), which concluded that innovation capabilities positively influence SME performance. SMEs with innovation capabilities can create unique products and services that attract attention and focus on customer needs.

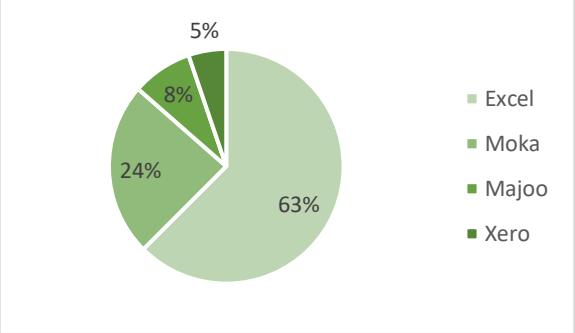
The second hypothesis test shows the positive and significant effect of technological innovation on SME performance. This means that businesses with high technological innovation will improve SME performance. This idea is supported by RBV theory, which states that good technological innovation will increase a business's competitive advantage and help it streamline its costs. The success of SMEs in the Industry 4.0 era heavily depends on business efficiency, such as utilizing social media for marketing goods or services, which is one example of a business strategy leveraging technology. SME operators can sell their products online using platforms like Facebook Marketplace, Instagram, and TikTok Shop. Based on 96 respondents in this study, SME owners utilize technology in business management, such as payment systems (QR code, e-wallet, POS, PayPal), design applications (Canva, Adobe Premiere Pro, Photoshop, CapCut), accounting systems (Excel, Moka, Majoo, Xero), and several other specialized websites that assist SME performance.



Graph 1. Payment System Users



Graph 2. Design Application Users\



Graph 3. Journaling System Users

SMEs in the service sector can use this technology to simplify processes, expand their customer base, and become more competitive in an increasingly competitive market. Some businesses have successfully implemented technological innovations by improving production processes, enhancing product/service design, and expanding product reach, thereby positively impacting SME performance. However, 32% of businesses also faced challenges in integrating new technology into their operations, while 68% were able to adapt easily to changes and innovations. The findings of this study align with those of Setyawati et al. (2023), who concluded that SMEs can compete in more challenging markets by using appropriate technology, thereby gaining a competitive edge over rivals in terms of cost and uniqueness. SMEs must ensure that the new technologies they adopt and the technical advancements they create align with their business needs and objectives.

Conclusion

This study concluded that innovation capability and technological innovation have a positive and significant effect on the performance of service sector SMEs in Batam City. The study found that innovation is a determinant of business success and is one of the

main ways businesses can thrive in the market. SMEs with higher levels of innovation are more likely to initiate and sustain innovative projects. This is critical to improving competitive advantage, performance, and overall business operations. Given that the majority of businesses have only been in operation for one to four years, our findings show that SMEs in Batam's service sector frequently employ innovative strategies to enhance their business performance. It's important to remember that certain well-established companies have a tendency to reject and not adjust to technology advancements in the workplace. For SMEs in Batam City, it is advisable to take advantage of the latest technological tools and tailor them to their respective business needs. Invest in employee training on business trends and practices. Utilize technology as a tool to help boost innovation and creativity. By developing strategic innovation skills tailored to their individual needs, SMEs can gain a significant competitive advantage.

Notwithstanding the findings, this study includes a number of limitations that present chances for further investigation. First, choosing a broader research goal is advised for future studies in order to enhance the number of samples. Second, this study uses a quantitative approach by relying solely on questionnaires for data collection. To gain a broader understanding, researchers can further use qualitative methods through in-depth interviews and group discussions. Third, future researchers can expand the scope of relevant variables by involving other supporting aspects.

References

Ahmad, S. Z., Abu Bakar, A. R., & Ahmad, N. (2019). Social media adoption and its impact on firm performance: the case of the UAE. International Journal of Entrepreneurial Behaviour and Research, 25(1), 84–111. https://doi.org/10.1108/IJEBR-08-2017-0299

Aris. (2019, June 24). Ada 81.486 Usaha Mikro Kecil dan Menengah di Kota Batam. Batampos.Co.Id. https://batampos.co.id/2019/06/24/ada-81-486-usaha-mikro-kecil-dan-menengah-di-kota-batam/

Batam Kembangkan Ekonomi Daerah Berbasis Potensi Daerah. (2022, November 17). Media Center Pemko Batam. https://mediacenter.batam.go.id/2022/11/17/batam-kembangkan-ekonomi-daerah-berbasis-potensi-daerah/

Bouncken, R. B., Kraus, S., & Roig-Tierno, N. (2021). Knowledge- and innovation-based business models for future growth: digitalized business models and portfolio considerations. Review of Managerial Science, 15(1), 1–14. https://doi.org/10.1007/s11846-019-00366-z

Carrasco-Carvajal, O., & Garciá-Pérez-De-Lema, D. (2021). Innovation capability and open innovation and its impact on performance in smes: An empirical study in chile. International Journal of Innovation Management, 25(4). https://doi.org/10.1142/S1363919621500390

Chamsuk, W., Fongsuwan, W., & Takala, J. (2017). The Effects of R&D and Innovation Capabilities on the Thai Automotive Industry Part's Competitive Advantage: A SEM Approach. Management and Production Engineering Review, 8(1), 101–112. https://doi.org/10.1515/mper-2017-0011

Chege, S. M., & Wang, D. (2020). The influence of technology innovation on SME performance through environmental sustainability practices in Kenya. Technology in Society, 60, 101210. https://doi.org/10.1016/j.techsoc.2019.101210

Fang, G. G., Qalati, S. A., Ostic, D., Shah, S. M. M., & Mirani, M. A. (2022). Effects of entrepreneurial orientation, social media, and innovation capabilities on SME performance in emerging countries: a mediated–moderated model. Technology Analysis and Strategic Management, 34(11), 1326–1338. https://doi.org/10.1080/09537325.2021.1957816

Farida, I., & Setiawan, D. (2022). Business Strategies and Competitive Advantage: The Role of Performance and Innovation. Journal of Open Innovation: Technology, Market, and Complexity, 8(3), 163. https://doi.org/10.3390/JOITMC8030163

Felício, J. A., Couto, E., & Caiado, J. (2014). Human capital, social capital and organizational performance. Management Decision, 52(2), 350–364. https://doi.org/10.1108/MD-04-2013-0260

Ferreira, J., & Coelho, A. (2020). Dynamic capabilities, innovation and branding capabilities and their impact on competitive advantage and SME's performance in Portugal: the moderating effects of entrepreneurial orientation. International Journal of Innovation Science, 12(3), 255–286. https://doi.org/10.1108/IJIS-10-2018-0108

Ganguly, A., Kumar, C., Saxena, G., & Talukdar, A. (2020). Firms' Reputation for Innovation: Role of Marketing Capability, Innovation Capability, and Knowledge Sharing. Journal of Information and Knowledge Management, 19(2). https://doi.org/10.1142/S0219649220500045

Gempur Pamungkas, A., Suharko, A., Apriani, D., Ayu Nabila, E., Bakrie, U., Rasuna Epicentrum, K., & R Rasuna, J. H. (2023). Analysis of the Effect of Quality, Service Price and Satisfaction on Patients and Their Impact on Visits to Exclusive Dental Clinics in South Jakarta. Cikokol, Kec. Tangerang, 7(1), 9–15. https://doi.org/10.33050

Ghozali, I. (2018). Aplikasi analisis multivariete dengan program IBM SPSS 23.

Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. International Journal of Production Economics, 133(2), 662–676. https://doi.org/10.1016/j.ijpe.2011.05.014

Hanaysha, J. R., Al-Shaikh, M. E., Joghee, S., & Alzoubi, H. M. (2022). Impact of Innovation Capabilities on Business Sustainability in Small and Medium Enterprises. FIIB Business Review, 11(1), 67–78. https://doi.org/10.1177/23197145211042232

Harmawanti Marhaeni. (2022). STATISTIK KARAKTERISTIK USAHA 2022. BPS RI.

Institute for Development of Economics and Finance (INDEF). (2024). PERAN PLATFORM DIGITAL TERHADAP PENGEMBANGAN UMKM DI INDONESIA.

Izadi Z.D, J., Ziyadin, S., Palazzo, M., & Sidhu, M. (2020). The evaluation of the impact of innovation management capability to organisational performance. Qualitative Market Research, 23(4), 697–723. https://doi.org/10.1108/QMR-04-2020-0052

Jin, S. H., & Choi, S. O. (2019). The effect of innovation capability on business performance: A focus on it and business service companies. Sustainability (Switzerland), 11(19). https://doi.org/10.3390/su11195246

Maldonado-Guzmán, G., Garza-Reyes, J. A., Pinzón-Castro, S. Y., & Kumar, V. (2019). Innovation capabilities and performance: are they truly linked in SMEs? International Journal of Innovation Science, 11(1), 48–62. https://doi.org/10.1108/IJIS-12-2017-0139

Migdadi, M. M. (2021). Knowledge management, customer relationship management and innovation capabilities. Journal of Business and Industrial Marketing, 36(1), 111–124. https://doi.org/10.1108/JBIM-12-2019-0504

Mothe, C., & Thi, T. U. N. (2010). The link between non-technological innovations and technological innovation. European Journal of Innovation Management, 13(3), 313–332. https://doi.org/10.1108/14601061011060148

Sari, Y., Oktarina, Y., Munajat, & Kenamon, M. (2022). The Role of Innovation Capability in MSME Sustainability During the Covid-19 Pandemic. International Journal of Social Science and Business, 6(4), 502–511. https://doi.org/10.23887/ijssb.v6i4.46158

Saunila, M. (2020). Innovation capability in SMEs: A systematic review of the literature. Journal of Innovation and Knowledge, 5(4), 260–265. https://doi.org/10.1016/j.jik.2019.11.002

Sektor Pariwisata di Batam Berkembang Pesat. (2023, April 17). BP Batam. https://bpbatam.go.id/sektor-pariwisata-di-batam-berkembang-pesat/

Setyawati, A., Mustikarini, C. N., Chusnu, R., Diah Kusuma, S., Merdekawati, E., & Seseli, I. (2023). SULTANIST: Jurnal Manajemen dan Keuangan Volume: 11 No: 2 Tahun 2023 Page (228-237) ANALYSIS OF MSME BUSINESS PERFORMANCE IN THE ERA OF INDUSTRIAL REVOLUTION 4.0: CASE STUDY ON MSME IN THE CULINARY SECTOR. https://sultanist.ac.id/index.php/sultanist

Silalahi, M., Komariyah, I., Sari, A. P., Purba, S., Sudirman, A., Nugraha, N. A., Purba, P. B., Saragih, L. M. S., Gandasari, D., & Sudarmanto, E. (2020). Dasar-Dasar Manajemen dan Bisnis. Yayasan Kita Menulis.

Suhartanto, D. (2020). Analisa Data untuk Riset Bisnis. Politeknik Negeri Bandung.

Wernerfelt, B. (1984). A Resource-based View of the Firm. In Strategic Management Journal (Vol. 5).

Yaakub, S. (2018). INNOVATION AND TECHNOLOGY ADOPTION CHALLENGES: IMPACT ON SMEs' COMPANY PERFORMANCE Hamidatun khusna Mustafa. https://www.researchgate.net/publication/329801630

Yordan Hermawan Apidana, & Dian Rusvinasari. (2024). Social Media Usage On MSMEs' Performance: The Moderating Role Of Innovation Capability. Jurnal Manajemen, 28(1), 175–199. https://doi.org/10.24912/jm.v28i1.1805

Yu, C., Zhang, Z., Lin, C., & Wu, Y. J. (2017). Knowledge creation process and sustainable competitive advantage: The role of technological innovation capabilities. Sustainability (Switzerland), 9(12). https://doi.org/10.3390/su9122280

Zhang, W., Daim, T., & Zhang, Q. (2018). Understanding the disruptive business model innovation of E-business microcredit: a comparative case study in China. Technology Analysis and Strategic Management, 30(7), 765–777. https://doi.org/10.1080/09537325.2017.1376047