

HOW TO INCREASE PRODUCT INNOVATION AND COMPETITIVE ADVANTAGE OF MSMEs IN BATAM CITY

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) play a very important role in economic recovery and enhancing a country's competitiveness. Facing competition from domestic and international firms, this study examines the complex relationships among business strategy, entrepreneurial orientation, authentic leadership, and their collective contribution to competitive advantage through innovation. Using a quantitative approach with online and offline questionnaires, the study focuses on manufacturing companies in Batam, with a sample of 341. Data was analyzed using SPSS and Partial Least Squares Structural Equation Modeling (PLS-SEM). The results reveal positive effects of authentic leadership and business strategy on both innovation and competitive advantage. Notably, innovation emerges as a key mediator, underscoring its essential role in strengthening competitive advantage. These findings provide valuable insights into the dynamics of MSMEs in Batam and offer practical guidance for enhancing competitiveness through strategic leadership and innovation.

Keywords: *authentic leadership; business strategy; entrepreneurial orientation; competitive advantage; innovation*

INTRODUCTION

MSMEs play a crucial role in driving economic recovery (Rosyidiana & Narsa, 2024; Woźniak et al., 2019). In the aftermath of the 1997 monetary crisis, MSMEs became a vital force in Batam's economic recovery, maintaining stability and promoting growth while many large corporations struggled to survive (Sanusi et al., 2022). Beyond their economic resilience, MSMEs have been a significant source of employment generation, reducing unemployment and improving community welfare (Sanusi et al., 2022; K. Sari & Hikmah, 2024). MSMEs also have a positive and significant impact on Batam's economic growth, where increases in their number, investment, and labor directly raise the city's economic output and Gross Regional Domestic Product (GRDP) (I. U. Sari & Saputra, 2020). However, a survey by Badan Pusat Statistik Provinsi Kepulauan Riau (2020) revealed that 68.80% of MSMEs in the region reported facing various challenges. Specifically, 38.90% struggled with capital, 37.82% with marketing, 23.77% with competition, and 15.65% with raw materials. Competitive pressures emerged as a significant issue for 23.77% of them. These figures highlight the substantial challenges MSMEs face and underscore the need for research into the factors that can enhance the competitive advantage of MSMEs in Batam City.

Despite the vital role of MSMEs in Batam's economy, many still face challenges such as limited innovation, weak leadership orientation, and the absence of adaptive business strategies (Indrawati et al., 2020; Sunargo, 2022). Many lack a strong entrepreneurial mindset—risk-taking, proactiveness, and innovation—which is crucial for developing unique strengths and outperforming competitors (Sunargo, 2022; Timotius, 2023). Insufficient innovation in products, processes, and people further weakens their ability to differentiate and compete effectively (Sunargo, 2022; Yuwono et al., 2025). These issues underscore the need to examine how authentic leadership, entrepreneurial orientation, and business strategy influence innovation and competitive advantage—especially in a trade-driven region like Batam that borders Singapore and Malaysia. Addressing these issues is essential to enhance the innovation capability and overall competitive advantage of Batam's MSMEs.

In a highly competitive market environment, MSMEs are under considerable pressure to continuously grow and innovate. Innovation contribute to sustainable development (Loann, 2024). As a result, the development of technological and informational capabilities becomes critical to their success (Gunartin et al., 2022), and that supported resilience (Angeles, 2024). Innovation, which is key to improving competitive advantage, can be leveraged to enhance business performance and ensure that MSMEs remain relevant and competitive in a dynamic market (Bărbulescu et al., 2021; Distanont & Khongmalai, 2020; Woźniak et al., 2019). Olazo (2023) asserts that innovation strategies can boost competitive advantage by enabling companies to create a unique market position through innovative approaches to product development, pricing, distribution, and promotion. Moreover, previous research has identified several factors influencing the competitiveness of MSMEs in Indonesia, including innovation, authentic leadership, entrepreneurial orientation, and business strategy (Farida & Setiawan, 2022; Purwanto et al., 2021; Senimantara et al., 2022).

Leadership influences work engagement (Schaufeli, 2021; Sentoso, 2019) which in turn drives organizational performance (Costa & Sukresna, 2024), and competitiveness (Alateeg & Alhammadi, 2024). Campbell et al. (2020) found that authentic leadership fosters innovation within organizations, creating opportunities for growth and competitive advantage. Purwanto *et al.* (2021) discovered that authentic leadership has a significant positive impact on innovative behavior. This is due to the ability of authentic leadership to enhance employee satisfaction and self-confidence, which in turn encourages reciprocal behaviors, such as improved performance and the development of innovative behavior. Authentic leadership also promotes transparent organizational communication (Yuwono, et al., 2023), which impacts employees' trust in their leaders, fostering positive attitudes such as work engagement (Lusianingrum & Santoso, 2022; Sentoso, 2019). Innovative behavior includes the ability to find new solutions, develop work ideas, and implement and commercialize innovations in the workplace, all of which contribute to enhancing the company's competitive advantage (Purwanto et al., 2021).

Competitive advantage stems from a company's strategic choices in leveraging market opportunities (Friesenbichler & Reinstaller, 2022). Timotius (2023) found that business strategies incorporating innovation people, process, and product innovations significantly enhance the competitive advantage for MSMEs. Furthermore, an appropriate business strategy not only drives new innovation but also improves business performance, directly contributing to the creation of competitive advantage (Farida & Setiawan, 2022). According to Latifah et al. (2021), the alignment between strategy and innovation plays a crucial role in improving MSME performance, where a differentiation strategy focusing on product uniqueness and quality requires innovation to add value to products and increase customer satisfaction. However, the innovation process carries a high risk of failure, necessitating careful decision-making by MSME owners (Latifah et al., 2021).

Entrepreneurial orientation is an important factor influencing a company's competitive advantage and has a positive impact on innovation performance in MSMEs (Iqbal et al., 2021; Sánchez-García et al., 2022; Utama et al., 2020). Active entrepreneurs in MSMEs are more likely to develop unique products, ultimately enhancing product performance compared to passive entrepreneurs (Avlonitis & Salavou, 2007; Iliev, 2024). Innovation is a fundamental aspect of entrepreneurial orientation that drives competitive advantage by enabling companies to redefine their market position and revitalize their competitive landscape (Covin & Miles, 1999; Yi et al., 2021), with innovation influencing company

performance (Purwianti, 2023). Additionally, proactive behavior and a willingness to take risks are key dimensions of entrepreneurial orientation that contribute to competitive advantage by enabling companies to anticipate and respond effectively to market changes (Mere et al., 2023).

Although numerous studies have examined the influence of authentic leadership, entrepreneurial orientation, business strategy, and innovation on MSME competitiveness in Indonesia, most have concentrated on major economic regions such as Java (Farida & Setiawan, 2022; Latifah et al., 2021; Purwanto et al., 2021). Research focusing on the Riau Islands Province particularly Batam City remains limited, despite its distinctive position as an industrial and trade hub bordering Singapore and Malaysia. Batam's economy is characterized by export-oriented activities and high market competition, requiring MSMEs to adopt innovative and adaptive strategies to sustain competitiveness. However, local MSMEs often lack sufficient leadership orientation, entrepreneurial dynamism, and innovation capacity to fully leverage these opportunities (Sanusi et al., 2022).

Given these conditions, this study seeks to fill the empiricasl gap by examining how authentic leadership, entrepreneurial orientation, and business strategy influence innovation and competitive advantage in Batam's MSMEs. Furthermore, it introduces innovation as a mediating variable to explain how these factors collectively strengthen MSME competitiveness. By focusing on Batam, this study provides new contextual evidence on the mechanisms that enhance MSME innovation capability and competitive advantage, offering insights for both academic and policy development.

METHODS

The focus of this study is on manufacturing MSMEs, with respondents aged between 18-55 years who are employed at one of the manufacturing companies in Batam City. The questionnaires were distributed both in-person at company locations and online via Google Docs. During the data collection process, the sample size was determined by multiplying the number of indicator questions by a factor of 10, ensuring sufficient data diversity for valid analysis (Hair et al., 2017). A total of 341 samples were collected. This study employed a 5-point Likert scale, ranging from strongly agree to strongly disagree. The questionnaire, initially developed in English, was translated into Indonesian.

The questionnaire consisted of five constructs: authentic leadership, business strategy, entrepreneurial orientation, innovation, and competitive advantage. Measurement items were adopted and adapted from previous studies to ensure content validity. The full list of items is provided in Table 1.

Table 1. Questionnaire Items

Construct	Source	Sample Items
Authentic Leadership	(Walumbwa et al., 2008)	1. Seeks feedback to improve interactions with others. 2. Accurately describes how others view his or her capabilities. 3. Solicits views that challenge his or her deeply held positions.
Business Strategy	(Latifah et al., 2021)	1. Our company continuously designs differentiation-based products. 2. Our company uses different technologies for products. 3. Our company continues to seek product quality based on differentiation. 4. Our company creates new features as the market needs.
Entrepreneurial Orientation	(Cadden et al., 2023)	1. Our firm is often the first to introduce innovative products/services. 2. Our firm actively invests in research to provide new value-adding products. 3. Our firm initiates actions to which competitors respond. 4. Our firm adopts a "beat the competitor" approach. 5. Our firm tends to invest in high-risk projects.
Innovation	(Latifah et al., 2021)	1. How often does the company create new products? 2. How often does the company modify existing products? 3. How often does the company enter new markets? 4. How often does the company plan new products?
Competitive Advantage	(Day & Wensley, 1988)	Compared to competitors over the past three years: 1. Entered new markets. 2. Increased market share. 3. Achieved a higher return on investment. 4. Attained gross profits above the industry average.

This study adopts a quantitative approach that provides statistical analysis of the research variables, which can be measured objectively. The collected data will be processed using SPSS (Statistical Package for the Social Sciences) and Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was selected because it effectively analyzes complex models involving multiple relationships among variables, supports simultaneous testing of interrelated constructs, and is suitable for exploratory research with smaller samples and non-normally distributed data (Hair et al., 2019). Data analysis will be divided into three stages: evaluation of the measurement model (outer model), evaluation of the structural model (inner model), and hypothesis testing.

RESULTS

The analysis of the questionnaire involving 341 respondents revealed that the majority of respondents are young and educated, with a slightly higher participation rate among women compared to men. These findings highlight that the younger age group, particularly those with at least a high school education, represents a significant segment of the workforce in Batam City. This is important as it indicates a potential human resource pool that MSMEs can optimize in their innovation strategies and competitive advantage development. Additionally, the distribution of participants across various areas in Batam City, with a predominance of respondents from the Batam Kota District, underscores the local relevance of this research. The income range and commuting distances that align with Batam's economic and geographic conditions provide insights into how these factors may influence the dynamics of competition and innovation among local MSMEs.

Construct reliability can be assessed using Cronbach's alpha and Composite Reliability. According to Chin (1998), a construct is considered reliable if both Cronbach's alpha and composite reliability values exceed 0.7. The reliability test results, indicate that all constructs have Cronbach's alpha and composite reliability values above 0.7. Therefore, it can be concluded that all constructs meet the required reliability standards.

Table 2. Path Coefficients Results

	Sample Mean	T Statistics	P Values	Decision
H ₁ : AL → CA	0.241	3.906	0	Supported
H ₂ : AL → IN	0.167	3.086	0.002	Supported
H ₃ : BS → CA	0.274	3.156	0.002	Supported
H ₄ : BS → IN	0.482	7.894	0	Supported
H ₅ : EO → CA	0.062	1.035	0.301	Not Supported
H ₆ : EO → IN	0.235	4.08	0	Supported
H ₇ : IN → CA	0.276	3.329	0.001	Supported
H ₈ :AL → IN → CA	0.046	2.241	0.025	Supported
H ₉ : BS → IN → CA	0.131	3.499	0	Supported
H ₁₀ : EO → IN → CA	0.066	2.261	0.024	Supported

The path coefficient testing is used to measure the significance of the direct effect of each variable. The hypothesis testing results presented in Table 2 show that 9 out of 10 hypothesis have significant effects.

Table 3. R Square Test Results

Construct	R Square	R Square Adjusted
Competitive advantage	0.574	0.569
Innovation	0.647	0.643

The R-square values for the endogenous variables of competitive advantage and innovation indicate that the model has strong predictive power (Table 3). According to the criteria established by Hair et al. (2019) , R-square values above 0.50 suggest that the model can explain substantial variance in the endogenous variables, supporting the predictive validity of this research.

DISCUSSION

The findings of this study reveal that authentic leadership has a significant positive impact on competitive advantage. This result supports prior research indicating that authentic leadership enhances employee confidence and satisfaction, which in turn contributes to a company's competitive edge (Lusianingrum & Santoso, 2022; Purwanto et al., 2021). When employees trust their leaders, they are more motivated to perform well, which in turn helps the company build and maintain a competitive position in the market. Thus, authentic leadership is confirmed as an effective strategy for organizations aiming to boost their market competitiveness.

The study also confirms that authentic leadership encourages innovation. This finding aligns with previous studies by Campbell *et al.*, 2020 and Purwanto *et al.*, 2021, which identified authentic leadership as a driver of innovative behavior within organizations. By fostering an environment of trust and employee satisfaction, authentic leadership facilitates creativity and the development of new ideas. Consequently, adopting authentic leadership can be a strategic approach for companies seeking to enhance their innovation capacity and gain a competitive advantage.

Business strategy has a significant positive effect on competitive advantage, is confirmed. When MSMEs are able to design strategies that effectively respond to market opportunities and competitive challenges, they strengthen their ability to outperform rivals (Friesenbichler & Reinstaller, 2022). This result highlights the importance of strategic decision-making in helping MSMEs create unique value and sustain long-term growth.

Furthermore, the study reveals that business strategy also has a significant positive influence on innovation. This result aligns with Timotius (2023), which shows that business strategies integrated with innovation—whether in terms of products, processes, or people—can significantly enhance innovation. The study also supports Farida & Setiawan (2022), who emphasize that appropriate business strategies not only stimulate new innovations but also improve overall business performance. Strategies that align with innovation play a crucial role in enhancing MSME performance (Latifah et al., 2021). Therefore, companies should develop and implement strategies that support innovation to stay competitive in the market.

Conversely, as entrepreneurial orientation does not have a significant positive effect on competitive advantage. Previous research often links entrepreneurial orientation with improved performance and competitive advantage, noting its positive impact on innovation in MSMEs (Iqbal et al., 2021; Sánchez-García et al., 2022). Avlonitis & Salavou (2007) also indicate that active entrepreneurs in MSMEs tend to develop unique and high-performing products. Although theories suggest a relationship between entrepreneurial orientation and competitive advantage through innovation and proactivity, this study does not reveal a direct impact, possibly due to contextual factors or other variables affecting this relationship.

In contrast, the findings confirm that entrepreneurial orientation has a significant positive effect on innovation. This finding is consistent with previous research that shows entrepreneurial orientation significantly contributes to innovation performance in MSMEs (Iqbal et al., 2021; Sánchez-García et al., 2022; Utama et al., 2020). Active entrepreneurial orientation enables entrepreneurs to develop innovative products that can enhance market performance (Avlonitis & Salavou, 2007). Additionally, theories such as Covin & Miles, (1999) dan Yi et al. (2021) confirm that innovation is central to entrepreneurial orientation, supporting competitive advantage by revitalizing a company's market position. Proactive behavior and willingness to take risks, as dimensions of entrepreneurial orientation, play a crucial role in effectively responding to market changes (Mere et al., 2023).

The study also reveals that innovation has a strong positive influence on competitive advantage. This aligns with prior research emphasizing innovation's critical role in strengthening a company's market position. Raymond et al. (2018) highlight that technological and informational capabilities are essential for MSMEs to grow and innovate, thereby reinforcing their competitive edge. Similarly, studies by Bărbulescu et al. (2021) and Distanont & Khongmalai (2020) show that innovation drives business performance and helps companies stay relevant in dynamic markets. Innovation strategies

enable companies to establish unique market positions, thus enhancing their competitiveness (Olazo, 2023). Therefore, innovation is not merely a tool but a fundamental element for MSMEs to maintain and boost their competitive advantage amid intense competition.

The findings confirm that innovation significantly mediates the relationships between authentic leadership, business strategy, and entrepreneurial orientation with competitive advantage. This indicates that innovation acts as a key mechanism through which these organizational factors enhance competitiveness. Specifically, authentic leadership promotes innovation by creating a work environment rooted in trust and openness, allowing employees to generate and implement creative ideas that strengthen the firm's market position (Campbell et al., 2020; Lusianingrum & Santoso, 2022; Purwanto et al., 2021). Similarly, business strategies that emphasize innovation enable firms to better respond to market changes and customer needs, thereby amplifying their competitive advantage (Friesenbichler & Reinstaller, 2022; Latifah et al., 2021; Timotius, 2023). Moreover, entrepreneurial orientation contributes to competitive advantage indirectly through innovation, as proactive and risk-taking behavior encourages firms to develop unique products and processes that enhance performance (Covin & Miles, 1999; Yi et al., 2021). These results emphasize that innovation not only drives competitiveness directly but also strengthens the positive effects of leadership, strategy, and entrepreneurial behavior, making it a central factor in sustaining MSME success in dynamic markets.

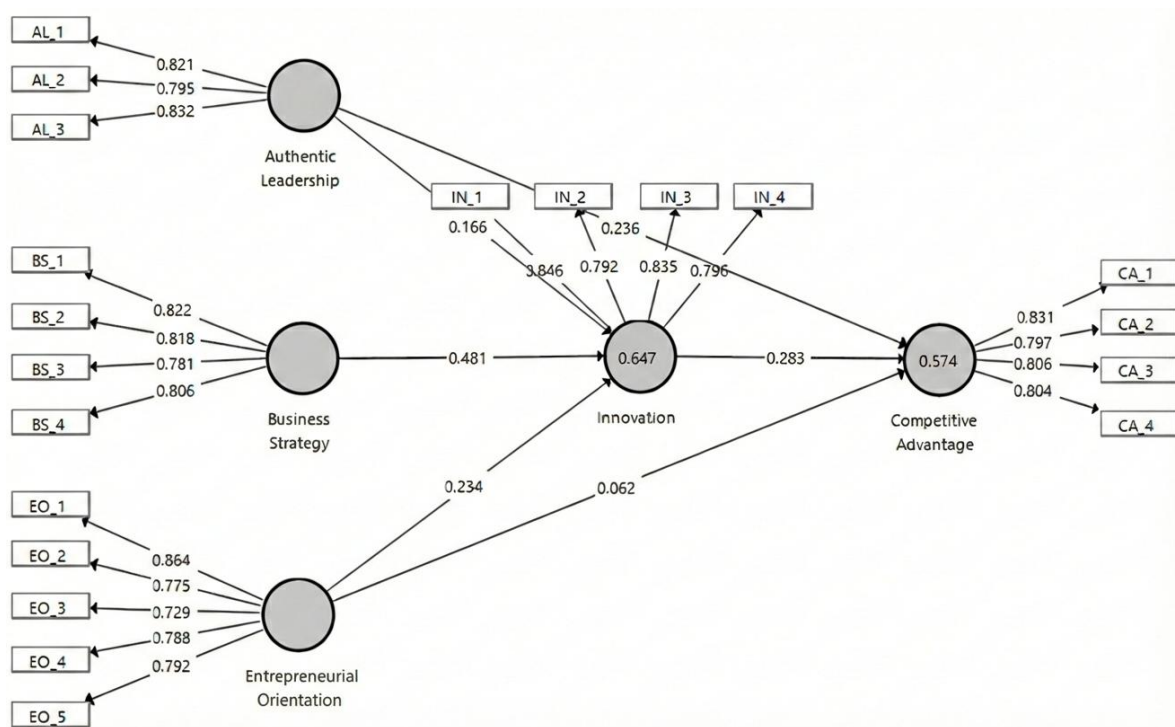


Figure 1. Path Analysis Result

CONCLUSIONS

This study highlights the importance of authentic leadership, entrepreneurial orientation, and business strategy in enhancing the competitive advantage of manufacturing MSMEs in Batam through innovation. The findings confirm that innovation acts as a key mediating factor linking these variables to competitive advantage, emphasizing that MSMEs can strengthen their market position by cultivating innovative capabilities supported by effective leadership and strategic alignment. Nevertheless, the study is limited to manufacturing MSMEs in Batam, which may restrict the generalizability of the findings to other sectors or regions, and its cross-sectional design does not

capture changes over time. From a managerial perspective, MSME leaders are encouraged to adopt authentic leadership practices that build employee trust and creativity, develop adaptive business strategies aligned with innovation goals, and strengthen entrepreneurial orientation to proactively respond to market dynamics. Future research should expand to other industries or regions, utilize longitudinal approaches to assess causal relationships, and consider moderating variables such as market turbulence or digital capability to deepen understanding of how innovation drives competitiveness.

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