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Strategic Entrepreneurship, Business Model Agility, and Growth of Green SMEs in Indonesia: Adaptation to a Dynamic Business Environment

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ABSTRACT

This study examines the relationship between *strategic entrepreneurship*, *business model agility*, and *the growth of green MSMEs in Indonesia*, with an emphasis on the moderating role of *adaptation to a dynamic business environment*. This study was prompted by increasing global market volatility and the importance of sustainability-oriented business models for small and medium-sized enterprises. Using an explanatory quantitative design, data were collected from 287 green MSMEs in West Java, Yogyakarta, and East Java between April and August 2025 and analysed using Partial Least Squares–Structural Equation Modelling (PLS-SEM). The results show that strategic entrepreneurship significantly enhances the growth of green SMEs, both directly and indirectly through business model agility, while adaptation to a dynamic environment strengthens these relationships. These findings highlight that entrepreneurial capability and agility serve as critical mechanisms for sustaining growth in uncertain markets. This study contributes to the integration of strategic entrepreneurship theory, dynamic capability theory, and contingency theory, with practical implications for SME leaders and policymakers to promote innovation, adaptability, and sustainable competitiveness.

Keywords: Strategic Entrepreneurship, Business Model Agility, Dynamic Business Environment, Green SMEs, Sustainable Growth.

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INTRODUCTION

The rapid transition to a sustainable economy has become a national and global priority, placing micro, small and medium enterprises (MSMEs) at the forefront of Indonesia's economic transformation. MSMEs account for more than 99% of total businesses and contribute around 60% of the country's gross domestic product (GDP), while employing nearly 97% of the national workforce (Ministry of Cooperatives and SMEs, 2024). Despite this enormous contribution, MSMEs face persistent challenges such as limited access to finance, technological backwardness, and weak environmental management practices. For companies that implement environmentally friendly principles – known as green MSMEs – these challenges are compounded as they must pursue profitability and environmental responsibility simultaneously.

Recent initiatives such as the Indonesian Green Industry Standard (SNI Hijau) and the 2030 Circular Economy Roadmap aim to accelerate the transition to sustainable production. However, Indonesia's business climate remains highly dynamic and influenced by rapid technological advances, changing consumer behaviour, and environmental regulations (Li et al., 2023; Kim, 2025). Similar patterns are observed in studies of MSMEs across Southeast Asia, where entrepreneurial leadership and adaptive strategies emerge as key drivers of resilience in uncertain contexts (Bangguiyac & Castañeda, 2022). Such turbulence requires MSMEs to build strategic and adaptive capacities that go beyond traditional business methods. In this context, sustainable growth increasingly depends on how well MSMEs can align entrepreneurial orientation with strategic leadership and combine creativity with long-term competitiveness.

The concept of strategic entrepreneurship (SE) captures this dual focus and integrates opportunity exploration with strategic resource utilisation (Ireland & Webb, 2007). SE enables companies to balance innovation and efficiency so that they can adapt to new challenges while maintaining growth. Empirical studies confirm that SE enhances innovation and performance across various sectors (Alzoubi, Alshurideh & Alkurdi, 2021; Alfoqahaa, 2020), but its role in sustainability-oriented MSMEs in developing countries remains under-researched.

An important mechanism linking SE to business growth is Business Model Agility (BMA) – the ability to continuously reconfigure how value is created, delivered, and captured in response to change (Doz & Kosonen, 2010). For green MSMEs, agility reflects the ability to adapt not only to market or technological changes, but also to sustainability demands such as environmentally friendly innovation and resource efficiency (Clauss et al., 2019; Arsawan, 2022). BMA thus represents the operational pathway that SE uses to transform vision into adaptive performance.

However, the benefits of SE and BMA depend on how effectively companies manage adaptation to a dynamic business environment (ADBE). According to contingency theory, strategic effectiveness arises from the fit between organisational strategy and environmental conditions (Donaldson, 2001). ADBE encompasses a company's ability to interpret external disruptions – technological changes, political changes, or market uncertainty – and adjust its strategy accordingly (Li, Zhao & Sun, 2023). For green MSMEs, adaptation often involves digital transformation, regulatory learning, and flexible collaboration practices (Liang et al., 2024; Mollah, Jahan & Hasan, 2024).

Although previous research has examined SE and agility in large firms, few empirical studies have examined how these capabilities interact with environmental adaptation to drive the growth of green MSMEs in new markets. This study addresses this gap by integrating strategic entrepreneurship theory, dynamic capacity theory, and contingency

theory into a unified framework. Specifically, this study examines (1) the direct effect of SE on MSME growth, (2) the mediating role of BMA in this relationship, and (3) the moderating effect of ADBE on the interaction between SE, BMA, and growth.

Thus, this study contributes to a more comprehensive understanding of how sustainability-driven small businesses can achieve long-term competitiveness. In practice, this study provides insights to MSME leaders and policymakers on how strategic entrepreneurship, agility, and adaptive learning can transform environmental challenges into opportunities for innovation and growth. Essentially, this study positions SE as an important factor for sustainable resilience, where agility and adaptation serve as important mechanisms for success in Indonesia's rapidly evolving business environment.

LITERATURE REVIEW

Strategic Entrepreneurship and Green MSME Growth

Strategic Entrepreneurship (SE) integrates opportunity-oriented behaviour with strategic resource management to achieve competitive advantage (Ireland & Webb, 2007). It combines the entrepreneurial desire to innovate with the strategic discipline necessary for sustainable growth.

For micro, small, and medium enterprises (MSMEs), especially those operating in the green sector, SE offers a framework for balancing creativity with resource efficiency. Previous studies have shown that SE improves company performance through innovation and proactive market behaviour (Alzoubi, Alshurideh & Alkurdi, 2021; Alfoqahaa, 2020).

In the context of sustainability, SE encourages companies to align economic goals with environmental commitments, for example through environmentally friendly design and environmentally friendly product innovation (Rustiarini, Sutrisno, & Nugrahani, 2022). However, research on SE in developing countries is still limited, especially in terms of environmentally friendly MSMEs operating under resource constraints and institutional uncertainty.

Therefore, this study argues that social entrepreneurship enables green micro, small, and medium enterprises in Indonesia to identify opportunities for sustainable value creation and develop strategic measures that enhance competitiveness and growth.

H1: Strategic entrepreneurship positively influences the growth of green MSMEs.

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Business Model Agility as a Mediating Mechanism

Business model strength (BMA) refers to a company's ability to adapt its mechanisms for creating, delivering and capturing value in order to respond effectively to changes in the external environment (Doz & Kosonen, 2010). BMA has its roots in Dynamic Capability Theory (Teece, Pisano & Shuen, 1997) and represents the operational dimension of a company's adaptability – the ability to identify opportunities, take advantage of them and adapt resources accordingly (Teece, 2018).

For green SMEs, agility means adapting production methods, distribution channels or product design in line with sustainability requirements and market changes. Companies that quickly change their business models can remain competitive even when faced with technological or regulatory disruptions.
(Clauss et al., 2019) found that agile business models improve innovation performance, while (Arsawan, 2022) observed that Indonesian SMEs develop agility through

knowledge sharing and collaboration. BMA operationalises strategic entrepreneurship by transforming entrepreneurial intentions into flexible actions. Without agility, strategic plans remain static and lose their relevance.

Several studies (Rofiaty et al., 2022; Munawar, Khapudin, & Effendi, 2023; Widi et al., 2024) confirm that agility mediates the impact of strategic orientation and innovation on performance in dynamic environments, especially in SMEs striving to align sustainability with resilience goals.

Therefore, this study argues that environmentally friendly SMEs with more flexible business models are more effective in translating social responsibility into sustainable growth.

H2: Business model agility mediates the relationship between strategic entrepreneurship and the growth of green MSMEs.

Adaptation to a Dynamic Business Environment as a Moderating Factor
Companies operate in an increasingly volatile, uncertain, and complex environment. Adaptation to the Dynamic Business Environment (ADBE) describes a company's ability to align its internal resources with external changes. According to contingency theory (Donaldson, 2001), strategic effectiveness depends on the extent to which internal strategies are aligned with the surrounding environment. Companies that continue to learn and adapt to changes in regulations, technology, and markets have a better chance of maintaining growth (Li, Zhao & Sun, 2023).

In Indonesia, the dynamic environment is driven by digitalisation, changing consumer preferences, and environmental regulations. Micro, small, and medium-sized enterprises that adapt quickly – by implementing digital tools, following new environmental standards, or collaborating with sustainability networks – are more likely to turn uncertainty into a competitive advantage (Liang et al., 2024).

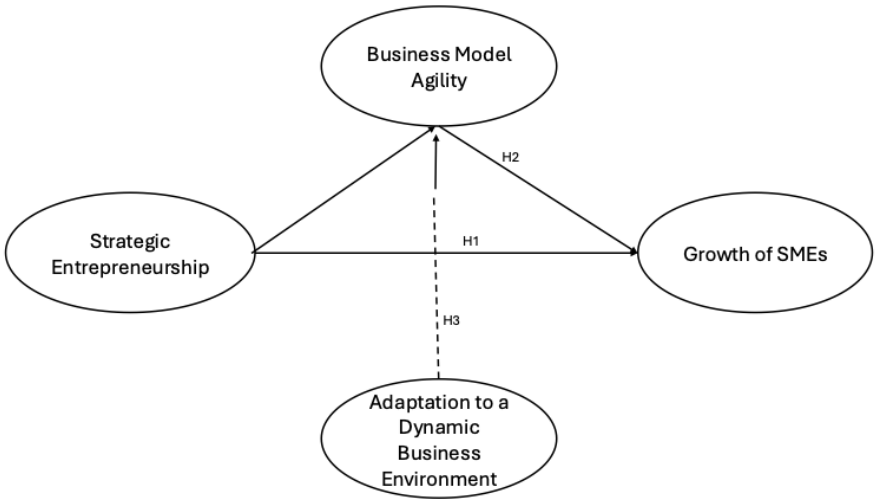
ADBE is expected to strengthen the relationship between SE, BMA, and growth. When companies have high adaptability, their entrepreneurial behaviour and agility have a greater impact on performance outcomes. Conversely, strong SE or BMA may also yield limited results in rigid organisations.

H3: Adaptation to a dynamic business environment strengthens the positive relationship between strategic entrepreneurship, business model agility, and the growth of green MSMEs.

Conceptual Framework
Based on these perspectives, this study proposes an integrated model that explains how strategic entrepreneurship, business model agility and adaptability collectively promote the growth of SMEs in a dynamic context.

Strategic entrepreneurship (SE) directly affects the growth of SMEs by promoting innovation and the exploitation of opportunities. Business model agility (BMA) acts as a mediator, translating SE into adaptive performance. Adaptation to a dynamic business environment (ADBE) acts as a moderator, strengthening this relationship under conditions of high uncertainty.
This framework integrates strategic entrepreneurship theory, dynamic capabilities theory and contingency theory, offering a holistic understanding of how small, sustainability-oriented companies can remain resilient and competitive in a turbulent environment.

Figure 1. Research Framework



RESEARCH METHOD

Research Design and Context

This study employs a quantitative explanatory design, which is appropriate for testing causal relationships between variables and validating the proposed conceptual model. The study focuses on green SMEs in Indonesia, defined as micro, small, and medium-sized enterprises that incorporate environmental aspects such as energy efficiency, waste reduction, and sustainable materials into their business activities. The context of this study was chosen because Indonesia has experienced rapid political developments and ecological transformations in the SME sector, particularly in regions such as West Java, Yogyakarta, and East Java, where local governments actively promote environmentally friendly business initiatives and digitalisation programmes (Ministry of Cooperatives and SMEs, 2024). These provinces have diverse socio-economic and industrial conditions and thus offer a comprehensive perspective on the dynamics of green SMEs in developing countries.

Sampling and Respondents

The target group consists of green SMEs registered with regional cooperatives and SME authorities, as well as participants in the Green Economy Acceleration Programme under the Indonesian Ministry of Cooperatives and SMEs. The sampling method used was a targeted sample to ensure that only companies meeting the following criteria were included:

1) at least three years of continuous operation,
2) implementation of environmentally friendly practices (e.g. environmentally friendly products, waste reduction, renewable materials) and
3) decision-makers (owners, founders or managers) who are able to answer strategic and operational questions.

Of the 320 questionnaires distributed between April and August 2025, a total of 287 valid responses were collected, representing a response rate of 89.6%. The sample included companies from various industries such as eco-friendly food processing, sustainable fashion, ecotourism and renewable crafts. In terms of company size, 43% were micro-enterprises, 39% were small enterprises and 18% were medium-sized enterprises. The gender distribution among respondents was relatively balanced, with 54% men and 46% women acting as owners or managers. The majority of respondents had more than five years of management experience, reflecting a deep understanding of business operations and environmental challenges.

Data Collection Procedure

The data was collected using a structured questionnaire, which was completed both in person and online. To ensure comprehension and avoid misinterpretations, a bilingual format (Bahasa Indonesia–English) was used. Prior to the final survey, a pilot test was conducted with 30 KKMU owners to assess clarity, reliability and face validity. Minor changes were made to some items to make the wording more consistent.

The final instrument consisted of five main sections: (1) demographic data and information about the company profile, (2) strategic entrepreneurial items, (3) items about the agility of the business model, (4) items about adaptation to a dynamic business environment, and (5) measures for SME growth. Responses were rated on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The use of the Likert scale is well suited to recording perceptions and attitudes towards dynamic and strategic constructs, which are often subjective but can be measured using behavioural indicators.

Measures

The measurement elements for each construct are based on scales that have been established and validated in previous studies, and adapted to the MSME context.

- Strategic entrepreneurship (SE): Measured using ten points adapted from (Ireland & Webb, 2007) and (Alfoqahaa, 2020), which include the ability to identify opportunities, take risks, coordinate resources, and orient towards innovation. Examples of these points are ‘Our company actively seeks new opportunities in the environmentally friendly market’ and ‘We often introduce new environmentally friendly products or processes.’
- Business model flexibility (BMA): Measured using eight points adapted from (Doz & Kosonen, 2010) and (Clauss et al., 2019), focusing on responsiveness, business restructuring, and speed of innovation. Example points: ‘Our company can quickly change products and services to meet environmental standards’ and ‘We adjust our business model when market trends change’.
- Adaptation to a dynamic business environment (ADBE): Measured using five points from (Li et al., 2023) and (Liang et al., 2024) covering environmental awareness, digital adaptation, and learning orientation. Example points: ‘Our company quickly adapts its operations to regulatory changes’ and ‘We continue to learn to deal with market uncertainty.’
- Growth of micro, small, and medium enterprises: Measured using six points adapted from (Rahman & Ramli, 2022) and (Rustiarini et al., 2022), representing financial, market, and environmental growth. Example indicators: increased sales, entry into new markets, and improved environmental performance.

To ensure content validity, the instrument was reviewed by three academic experts in the fields of entrepreneurship and sustainability, as well as practitioners from the Directorate of MSMEs at the Ministry of Cooperatives. Cronbach's alpha and composite reliability values for all constructs exceeded the threshold of 0.70, indicating strong internal consistency. Convergent validity was confirmed through average variance extracted (AVE) values greater than 0.50, and discriminant validity was established using the Fornell–Larcker criteria.

Data Analysis Technique

The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS 4.0, a robust method suitable for complex models involving mediation and moderation with relatively small to medium sample sizes (Hair et al., 2021). PLS-SEM was chosen because it focuses on prediction-oriented analysis and is

suitable when the research objective is to explain the variation in the dependent variable (MSME growth).
The analysis was conducted using a two-stage method:

1) Measurement model assessment – Assessment of reliability, convergent validity, and discriminant validity.
2) Structural model assessment – Hypothesis testing through bootstrapping with 5,000 resamplings, yielding path coefficients, t-values, and p-values.
3) Multicollinearity was examined using VIF (Variance Inflation Factor) values, all of which were below 3.3, indicating no serious issues with multicollinearity.

To minimise methodological interference, procedural and statistical solutions were used, including anonymity guarantees, random topic distribution, and Harman's one-factor test. Overall, the research design, sampling strategy, and data analysis methods ensured accuracy, reliability, and validity in analysing the relationship between strategic entrepreneurship, business model flexibility, adaptation, and green growth in SMEs.

RESULTS

Descriptive Statistics

Before testing the hypotheses, a descriptive analysis was conducted to understand the central tendencies for each construct. Table 1 shows the mean (M), standard deviation (SD), minimum (Min.) and maximum (Max.) values for all latent variables used in this study.

Table 1. Descriptive Statistics of Constructs (N = 287)

Construct	Min.	Max.	M	SD
Strategic Entrepreneurship	2.10	5.00	4.12	0.58
Business Model Agility	2.00	5.00	4.05	0.61
Adaptation to Dynamic Business Environment	1.80	5.00	3.91	0.64
MSME Growth	2.30	5.00	4.08	0.59

Note. M = Mean; SD = Standard Deviation.
Source: Processed Data, 2025.

According to Table 1, respondents reported relatively high scores for all constructs. The mean for strategic entrepreneurship (M = 4.12) indicates that most environmentally friendly micro, small, and medium-sized enterprises are actively involved in identifying opportunities, innovation, and risk-taking. Similarly, business model flexibility (M = 4.05) indicates that these companies have the ability to restructure their operations in response to changes in the external environment and the market. The slightly lower average score for adaptation to a dynamic business environment (M = 3.91) means that although micro, small and medium-sized enterprises are generally adaptable, there is still room for improvement in terms of environmental analysis and strategic adaptation processes. Growth for micro, small and medium enterprises (M = 4.08) indicate a good level of performance in terms of market results and sustainability, reflecting resilience despite competition and regulatory challenges.

Overall, these results indicate that Indonesian green SMEs are strategic, proactive, and reasonably flexible organisations, but still face external adaptation constraints. The relatively narrow standard deviation interval (0.58–0.64) also indicates a homogeneous perception among respondents, suggesting a shared experience in dealing with market uncertainty driven by sustainability.

Evaluation of the measurement model

The reliability and validity of all constructs were assessed before the structural model was tested. Cronbach's alpha (α) and composite reliability (CR) exceeded the minimum threshold of 0.70, while the average extracted variance (AVE) was greater than 0.50, confirming convergent validity.

Discriminant validity was verified using the Fornell–Larcker criteria, which showed that the square root of the AVE for each construct was higher than its correlation with other constructs. No significant cross-loading issues were found, confirming the distinct characteristics of each construct. These results confirm the robustness of the measurement model and provide confidence to proceed to the hypothesis testing stage.

Structural model and hypothesis testing

The relationship between strategic entrepreneurship (SE), business model adaptability (BMA), adaptation to a dynamic business environment (ADBE), and the growth of micro, small, and medium enterprises (MSMEs) was examined using Partial Least Squares Structural Equation Modelling (PLS-SEM). Table 2 summarises the path coefficients, standard errors, beta values (β), and significance levels (*p* values) obtained from the bootstrapping procedure (5,000 resamplings).

Table 2. Structural Model Results

Hypothesis	Path Relationship	B	SE B	β	t-value	p-value	Supported
H1	SE → Growth	0.33	0.06	0.331	5.112	< 0.001	Yes
H2	SE → BMA → Growth (Mediation)	0.23	0.05	0.228	3.874	< 0.001	Yes
H3	SE × ADBE → Growth (Moderation)	0.17	0.06	0.169	2.947	0.003	Yes

*Note. R^2 (Growth) = 0.642; Q^2 = 0.412; **p** < 0.01.*
Source: Processed Data, 2025.

The results in Table 2 show that all three hypotheses (H1–H3) are confirmed. In particular, strategic entrepreneurship (SE) has a strong and positive direct effect on the growth of SMEs (β = 0.331, *t* = 5.112, *p* < 0.001), suggesting that companies that focus on identifying opportunities and innovations outperform their competitors. These results confirm the statement that SE is an important driver of sustainable performance (Ireland & Webb, 2007; Alzoubi et al., 2021).

Furthermore, business model agility (BMA) plays a significant mediating role between SE and growth (β = 0.228, *t* = 3.874, *p* < 0.001). This shows that strategic entrepreneurial actions only lead to growth if SMEs have the agility to adapt their business model in response to market and environmental signals. In other words, SE sets the direction and intention, while BMA realises this intention through adaptive implementation. This mediating effect supports the arguments of (Clauss et al., 2019) and (Doz & Kosonen, 2010), who emphasise agility as a core competence for maintaining competitiveness.
The interaction term between SE and ADBE (β = 0.169, *t* = 2.947, *p* = 0.003) confirms the moderating effect of environmental adaptation. In a volatile environment, the influence of SE on growth becomes stronger when companies are highly adaptable. This is consistent with the perspective of contingency theory (Donaldson, 2001) and the latest empirical findings by (Li et al., 2023) and (Liang et al., 2024), which show that a dynamic environment increases the benefits of strategic flexibility.

4.4 Coefficient of determination and predictive relevance

The value of R^2 of 0.642 shows that 64.2% of the variance in SME growth is explained by SE, BMA and ADBE, reflecting a high degree of explanatory power (Hair et al., 2021). The value of Q^2 of 0.412, calculated using a blindfolding procedure, also shows strong predictive relevance and suggests that the model can effectively predict the growth of green SMEs under different environmental conditions.
Furthermore, the analysis of the effect size (f^2) shows that SE has a large influence on growth ($f^2 = 0.35$), BMA has a moderate influence ($f^2 = 0.21$), and ADBE has a small to moderate influence ($f^2 = 0.14$). These results underscore that while strategic entrepreneurship remains the strongest predictor, agility and adaptation also make a significant contribution to explaining sustainable growth.

Summary of hypothesis testing
All hypotheses (H1–H3) were confirmed, proving that strategic entrepreneurship directly and indirectly promotes the green growth of SMEs and that adaptation to a dynamic business environment reinforces this relationship. The integration of SE, BMA and ADBE provides a solid framework for understanding how small businesses can grow amid uncertainty.

DISCUSSION

The main objective of this study is to investigate how strategic entrepreneurship (SE) drives the growth of green micro, small, and medium enterprises (MSMEs) in Indonesia through business model agility (BMA) and under the moderating influence of adaptation to a dynamic business environment (ADBE). This study aims to understand whether and how these interrelated constructs enable MSMEs to achieve sustainable outcomes in a volatile environment. The results of this study confirm that SE has a strong and positive direct effect on MSME growth, that BMA facilitates this relationship, and that ADBE strengthens the effect of SE and BMA on growth outcomes.

These results support the argument that environmentally friendly MSMEs in Indonesia cannot rely solely on traditional entrepreneurial orientation, but must integrate a strategic vision with adaptive mechanisms to maintain their competitiveness. In other words, entrepreneurial creativity must be integrated into an agile and environmentally conscious strategic framework. Therefore, this study emphasises that sustainability-driven entrepreneurship is not only about identifying opportunities but also about strategically coordinating resources and innovation in rapidly changing conditions.

Theoretical implications
The objective of this study is to examine how strategic entrepreneurship (SE) influences the growth of environmentally friendly micro, small, and medium enterprises (MSMEs) in Indonesia, considering the mediating role played by business model flexibility (BMA) and the moderating role played by adaptation to a dynamic business environment (ADBE). Using quantitative data from 287 environmentally friendly micro, small, and medium enterprises, the results of this study confirm that SE significantly increases the growth of micro, small, and medium enterprises, both directly and indirectly through BMA, while ADBE reinforces this effect.
These results emphasise that strategic entrepreneurship is not only about identifying opportunities, but also about strategically coordinating resources to create a balance between innovation and sustainability. For Indonesia's green micro, small and medium enterprises, this means that proactive entrepreneurship and strategic vision are essential to maintaining competitiveness in an increasingly dynamic and uncertain environment.

The strong direct influence of SE on the growth of micro, small, and medium enterprises confirms previous research showing that companies with a higher entrepreneurial

orientation, focus on innovation, and strategic renewal capabilities achieve better results (Ireland & Webb, 2007; Alzoubi et al., 2021; Zhou & Wu, 2023). These findings extend the application of SE theory to environmentally friendly micro, small, and medium-sized enterprises in developing countries and show that strategic entrepreneurship is effective even in companies with limited resources, if tailored to sustainability goals.

The mediating role played by business model flexibility supports the argument that the influence of SE on outcomes is realised through the company's ability to adapt and reconfigure its business model. This is consistent with dynamic capacity theory (Teece, 2018), which emphasises that the ability to discover and exploit opportunities must be complemented by the ability to change organisational routines. Agility enables micro, small, and medium-sized enterprises to change their products, processes, and partnerships to remain relevant in an era of technological and regulatory change. In line with the findings of (Clauss et al., 2019) and Rofiaty et al., 2022), this study confirms that business model agility translates strategic intentions into concrete results, enabling small companies to quickly shift to opportunities focused on sustainability.

The moderate role played by adaptation to a dynamic business environment further confirms contingency theory (Donaldson, 2001), which suggests that the influence of SE and BMA depends on environmental conditions. This is in line with evidence from Indonesian micro, small, and medium enterprises showing that government-supported empowerment initiatives and adaptation programmes significantly improve strategic flexibility and company performance (Bangguiyac & Castañeda, 2022; Lombogia et al., 2022). Positive moderation indicates that a dynamic context – characterised by uncertainty and change – can actually enhance the benefits of SE and agility when companies have the ability to adapt. Environmentally friendly micro, small, and medium-sized enterprises that react proactively to regulatory changes, consumer trends, and digital changes can turn turmoil into growth opportunities, which is in line with the findings of (Li et al., 2023) and (Liang et al., 2024).

Overall, these results indicate that SE, BMA, and ADBE are interdependent systems for achieving sustainable growth. SE provides direction and intent to innovate; BMA enables rapid implementation and adaptation; ADBE ensures that strategies remain aligned with external realities. This synergy explains why environmentally friendly micro, small, and medium-sized enterprises that combine these capabilities demonstrate greater resilience and long-term profitability.

From a management perspective, MSME owners must develop strategic and adaptive capabilities. Entrepreneurial creativity must be supported by flexibility in business models, for example by implementing modular production, utilising digital platforms, and building partnerships for environmental innovation. Managers must also encourage organisational learning to ensure continuous adaptation to volatile circumstances.

For policymakers, the research findings suggest that support for micro, small, and medium-sized enterprises should be expanded from financial support to strengthening strategic and adaptive competencies. Government programmes can integrate education in green innovation, digital transformation, and adaptive leadership. Encouraging collaboration among MSMEs through local clusters or sustainability networks can further accelerate knowledge transfer and collective resilience.

While this research provides valuable insights, it also acknowledges limitations, including its cross-sectional design and regional sampling, which may constrain causal conclusions and generalisations. Future research could use longitudinal or mixed

methods to capture changing adaptation patterns or investigate external institutional factors – such as regulation and financing – as moderators of SE effectiveness.

In summary, this study shows that strategic entrepreneurship drives the growth of green micro, small, and medium enterprises in Indonesia, especially when companies have the flexibility to change their business models and the adaptability to respond to a dynamic environment. Sustainable competition in the green micro, small, and medium enterprise sector is not only based on innovation, but also on sustainable strategy adjustment, flexibility, and adaptability.

CONCLUSION

This study examines how strategic entrepreneurship (SE) promotes the growth of green small and medium-sized enterprises in Indonesia, taking into account the mediating role played by business model agility (BMA) and the moderating role played by adaptation to a dynamic business environment (ADBE). The results of this study confirm that SE has a strong direct impact on the growth of SMEs and that this impact is partly mediated by BMA. In addition, ADBE reinforces this relationship and shows that companies that actively adapt to changing conditions can transform the uncertainty of their environment into opportunities for innovation and expansion.

Theoretically, this study integrates strategic entrepreneurship theory, dynamic capability theory, and contingency theory to explain how small businesses focused on sustainability achieve competitive and sustainable growth. The results of the study show that SE acts as a strategic foundation, BMA as an operational mechanism, and ADBE as an environmental catalyst for resilience and performance.

From a practical perspective, SME owners must harmonise their entrepreneurial vision with strategic planning and promote agility through innovation, collaboration and digital transformation. Policy makers, for their part, must prioritise capacity development programmes that promote agility and adaptive learning to ensure that SMEs can respond effectively to changes in their environment.

Essentially, this study concludes that sustainable competitiveness in Indonesia's green SME sector depends on the synergy between strategic entrepreneurship, agile business models and adaptability, which together form a dynamic triple for resilience and long-term growth in a rapidly changing business environment.

LIMITATION

This study acknowledges certain limitations. First, the cross-sectional design limits the ability to draw conclusions about causal relationships between strategic entrepreneurship, agility, and growth. Longitudinal studies are required to capture changes in firms' adaptability over time. Second, the sample size, which is limited to three provinces, may not be fully representative of the regional differences across the Indonesian SME landscape. Third, the reliance on self-reported data may lead to biases despite procedural controls. Future studies should combine survey data with objective performance indicators and extend the sample to other regions as well as institutional factors such as regulation, financing, and digital infrastructure to improve the robustness and generalisability of the results.

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DECLARATION OF CONFLICTING INTERESTS

The author declares that there are no **potential conflicts of interest** in relation to the research, writing and/or publication of this article. This study complies with all institutional research standards regarding data confidentiality, written consent and voluntary participation

REFERENCES

Alfoqahaa, S. (2020). Strategic entrepreneurship and organizational performance: The mediating role of innovation in Jordanian SMEs. *Journal of Entrepreneurship in Emerging Economies, 12*(4), 551–575. https://doi.org/10.1108/JEEE-03-2020-0071

Alzoubi, M., Alshurideh, M., & Alkurdi, B. (2021). The effect of strategic orientation on innovation capability and organizational performance. *Sustainability, 13*(8), 4461. https://doi.org/10.3390/su13084461

Arsawan, I. W. E. (2022). Developing organizational agility in SMEs through knowledge creation and collaboration. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(2), 77. https://doi.org/10.3390/joitmc8020077

Bangguiyac, G. D., & Castañeda, M. O. (2022). Entrepreneurial leadership and business performance of MSMEs: The mediating role of government support. *International Journal of Applied Business and Information Management, 8*(4), 112–125. https://ejournal.aibpmjournals.com/index.php/IJABIM/article/view/4079

Clauss, T., Abebe, M., Tangpong, C., & Hedding, M. (2019). Strategic agility, business model innovation, and firm performance: An empirical study. *Long Range Planning, 52*(4), 101882. https://doi.org/10.1016/j.lrp.2018.11.001

Donaldson, L. (2001). *The contingency theory of organizations*. Sage Publications.

Doz, Y., & Kosonen, M. (2010). Embedding strategic agility: A leadership agenda for accelerating business model renewal. *Long Range Planning, 43*(2–3), 370–382. https://doi.org/10.1016/j.lrp.2009.07.006

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage Publications.

Ireland, R. D., & Webb, J. W. (2007). Strategic entrepreneurship: Creating competitive advantage through streams of innovation. *Business Horizons, 50*(1), 49–59. https://doi.org/10.1016/j.bushor.2006.06.002

Kim, K. (2025). The relationships between environmental dynamism and innovation performance: The role of internal and external fit. *Sustainability, 17*(2), 449. https://doi.org/10.3390/su17020449

Li, S., Zhao, X., & Sun, Y. (2023). Dynamic capabilities, environmental dynamism, and sustainable innovation: Evidence from SMEs. *Sustainability, 15*(4), 2762. https://doi.org/10.3390/su15042762

Liang, Y., Koo, J.-M., & Lee, M.-J. (2024). Environmental dynamism, digitalization capability, and sustainable performance of SMEs. *Sustainability, 16*(17), 7674. https://doi.org/10.3390/su16177674

Lombogia, W., Lumapow, L., Kewo, C., Wantah, E., & Wuisang, J. (2022). Development of MSME economic empowerment materials in the new normal: Evidence from Bitung City, Indonesia. *Journal of Contemporary Development and Accreditation, 5*(1), 45–60. https://ejournal.aibpmjournals.com/index.php/JCDA/article/view/1380

Mollah, M. A., Jahan, S., & Hasan, M. M. (2024). Environmental dynamism, digital leadership, and SME transformation: Evidence from emerging markets. *Sustainability, 16*(18), 8023. https://doi.org/10.3390/su16188023

Munawar, F., Khapudin, N., & Effendi, H. (2023). Strategic agility and SME performance: Evidence from emerging markets. *Jurnal Aplikasi Manajemen, 21*(3), 555–568. https://doi.org/10.21776/ub.jam.2023.021.03.15

Rahman, N., & Ramli, A. (2022). The impact of innovation capability and sustainability orientation on SME performance. *Asia Pacific Journal of Innovation and Entrepreneurship, 16*(2), 202–218. https://doi.org/10.1108/APJIE-10-2021-0119

Rofiaty, Nusron, A., Yulianti, N. A., & Sunaryo, S. (2022). Entrepreneurial orientation, strategic agility, and SME performance in the green economy. *Journal of Economics, Business, and Accountancy Ventura, 25*(1), 48–60. https://doi.org/10.14414/jebav.v25i1.2885

Rustiarini, N. W., Sutrisno, T., & Nugrahani, D. (2022). Does green innovation improve SME performance? *Economies, 10*(12), 316. https://doi.org/10.3390/economies10120316

Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning, 51*(1), 40–49. https://doi.org/10.1016/j.lrp.2017.06.007

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Zhou, L., & Wu, W. (2023). The influence of strategic entrepreneurship on SME resilience under uncertainty: Evidence from Asia-Pacific markets. *Asia Pacific Business Review, 29*(4), 553–573. https://doi.org/10.1080/13602381.2023.2194437

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