

Implementation of Green Business Model in Culinary SMEs in Lampung for Sustainable Development

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ABSTRAK

Studi ini bertujuan untuk menganalisis implementasi Model Bisnis Hijau (GBM), mengidentifikasi faktor-faktor kunci yang mempengaruhinya, mengukur dampak ekonomi dan lingkungannya, serta memahami tantangan yang terkait. Secara metodologis, studi ini menggunakan pendekatan kuantitatif, dengan melakukan survei terhadap 384 UKM kuliner yang dipilih melalui pengambilan sampel acak bertingkat. Data yang dikumpulkan dianalisis menggunakan Structural Equation Modeling (SEM) dengan perangkat lunak AMOS 24.0 untuk menguji hubungan yang dihipotesiskan antar variabel. Temuan utama menunjukkan bahwa tingkat implementasi GBM saat ini berada pada tingkat menengah. Komitmen manajemen diidentifikasi sebagai pendorong yang paling signifikan. Adopsi tersebut menghasilkan manfaat yang substansial: peningkatan profitabilitas sebesar 23,4%, pengurangan biaya operasional sebesar 18,7%, dan penurunan limbah organik sebesar 31,2%. Kinerja keuangan dan dampak lingkungan ditemukan sebagai mediator yang efektif untuk mencapai pembangunan berkelanjutan. Implikasi utamanya adalah pembuatan kerangka kerja GBM yang disesuaikan untuk UKM kuliner Indonesia. Studi ini menawarkan kontribusi teoretis tentang "keberlanjutan yang tertanam secara lokal," menekankan perlunya mengadaptasi model berkelanjutan ke konteks lokal, sehingga memperkaya literatur tentang inovasi model bisnis di negara berkembang.

Kata kunci: Model Bisnis Hijau, UKM kuliner, pembangunan berkelanjutan, inovasi bisnis

ABSTRACT

The study aims to analyze the implementation of the Green Business Model (GBM), identify the key influencing factors, measure its economic and environmental impact, and understand the associated challenges. Methodologically, it employs a quantitative approach, conducting a survey of 384 culinary SMEs selected through stratified random sampling. The collected data were analyzed using Structural Equation Modeling (SEM) with AMOS 24.0 software to test the hypothesized relationships between variables. The key findings reveal that the implementation level of GBM is currently medium. Management commitment was identified as the most significant driver. The adoption resulted in substantial benefits: a 23.4% increase in profitability, an 18.7% reduction in operating costs, and a 31.2% decrease in organic waste. Financial performance and environmental impact were found to be effective mediators for achieving sustainable development. The main implication is the creation of a tailored GBM framework for Indonesian culinary SMEs. The study offers the theoretical contribution of "locally embedded sustainability," emphasizing the need to adapt sustainable models to local contexts, thereby enriching the literature on business model innovation in developing countries.

Keywords: Green Business Model, culinary smes, sustainable development, business innovation

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INTRODUCTION

The culinary sector contributes 41,5% to the national GDP and is one of the main drivers of the economy in Indonesia (Firdaus et al. 2024). Lampung Province, with its agro-industrial strength and

availability of local raw materials, has great potential in the development of culinary SMEs. However, the environmental challenges faced by this sector are increasingly complex, mainly due to conventional production practices that are not yet environmentally friendly (Qu et al. 2024). Negative impacts of the culinary industry include high energy consumption, dominant use of plastic packaging, and poor waste management (Operato et al. 2025). In Lampung, 30% of domestic waste comes from culinary activities, and around 65% of culinary SMEs still rely on fossil energy. This has led to regulatory pressure, one of which is through Government Regulation No. 27/2020 which requires the application of circular economy principles in certain waste management.

These regulatory pressures require culinary SMEs to adopt sustainable business models, but realization is not easy. The main obstacles include limited access to environmentally friendly technology, which is still out of reach for most businesses. Around 78% of SMEs still use old technology with low efficiency (Durrani et al. 2024). Limited capital also exacerbates the situation, as the initial investment for green technology is high and not comparable to the financial capacity of SMEs (Masruroh and Fardian 2022). Most businesses prioritize short-term needs, so sustainability issues are not yet a priority. Another problem arises on the human resources side. SME players' knowledge of the green business concept is still minimal; only 31% have an adequate understanding of sustainability principles (ICSP, 2024). Lack of technical skills in operating new technologies also hinders green transformation. On the market side, while consumer awareness of green products is increasing, the willingness to pay more is still limited. This creates uncertainty over the long-term return on investment (Ariestania and Adriyanto 2024).

Previous studies have generally highlighted the manufacturing and retail sectors in the context of green business. Research related to the culinary sector is still limited, although this sector has its own complexities in the supply chain and food waste management. For example, (Pattiruhu and Tanggulangan 2024) study on the textile sector has not touched on the character of the culinary sector, nor has (Cho et al. 2023) study focused on large restaurants in South Korea. In Indonesia, the study by Sari and Wijaya (2023) has also not touched on the implementation of sustainable business models as a whole in culinary SMEs (Charisma et al. 2025). This research offers novelty in several aspects. First, develop a framework for implementing a green business model that is tailored to the characteristics of culinary small and medium enterprises (SMEs) in Indonesia. Second, a theoretical approach that combines resource-based view and sustainable business model framework, to identify how SMEs utilize limited resources to achieve sustainability. Third, the geographical focus on Lampung provides a contextual and relevant picture of the economic reality of the region.

This study primarily aims to examine how green business models are adopted within culinary SMEs and determine the critical elements that contribute to their effective transition. In addition, this research also aims to design a practical framework that SMEs can use, considering financial, operational and

strategic aspects that suit their capacity. This study will evaluate the role of stakeholders such as local governments, financial institutions, and supporting organizations in supporting the adoption of green business models. In terms of theory, the concept of shared value from (Royo and Cuevas 2022) is the basis for understanding how sustainability can be used as a competitive advantage. This value-based approach encourages SMEs to create economic and environmental value simultaneously. In addition, innovations in financing such as green financing and impact investing open new avenues for SMEs to finance their business transformation. Collaboration between SMEs and the financial sector within a sustainability framework is an important area that needs to be further developed.

Green Business Model

The idea of a sustainable business framework has evolved into a corporate approach that incorporates ecological considerations into organizational activities. According to (Ferlito & Faraci, 2022), sustainable business model innovation is the ability to integrate sustainability into business models to achieve sustainable development goals. This definition emphasizes the importance of fundamental changes in the way companies operate to reduce negative impacts on the environment while creating positive value for society.

(Rosati et al., 2023) extended this concept by explaining that sustainable business model innovation (SBMI) is a business model transformation process that aims to reduce negative external effects while creating positive impacts on the environment and society. In a more comprehensive context, (Effendi et al., 2024) identified three main dimensions in a sustainable business model: economic, social, and environmental dimensions that must be integrated holistically.

(Ferlito & Faraci, 2022) The framework demonstrates that a sustainable business model requires changes across three key elements: value proposition, value creation and delivery, and value capture. This transformation includes not only technological aspects, but also changes in business processes, partnerships, and organizational structures that support sustainable practices.

Implementation of Green Business Model in SMEs

The implementation of the green business model in SMEs has different characteristics compared to large companies. (de Andrade et al., 2025) was highlighted that small and medium-sized enterprises encounter distinct obstacles when implementing sustainable methods, such as constraints in financial capacity, expertise, and availability of eco-friendly innovations. However, they also have advantages in flexibility and rapid adaptability. From an Indonesian perspective, research conducted by (Yudawisastra et al., 2023) shows that SMEs in Indonesia have great potential to implement green business models, especially in the culinary sector. They identified several practices that have been implemented, such as the use of local raw materials, waste reduction, and environmentally friendly packaging.

In a broader context, (Ardhiyansyah & Juniansyah, 2024) through their research in various developing countries, including Indonesia, found that culinary SMEs can implement green business models through a phased approach that starts from simple practices such as food waste reduction to the implementation of more sophisticated green technologies. Several factors have been identified as determinants of successful implementation of green business models in SMEs. (Rodrigues & Franco, 2023) categorized these factors into internal and external factors. Internal factors include management commitment, internal capabilities, and available resources. While external factors include pressure from stakeholders, government regulations, and market conditions (Cahyani and Puspitosari 2023), (Supriyanto et al. 2023), (Yanto, Sari, and Suryani 2025), (Sugiono, Suropto, and Yanto 2021), (Sari, Yanto, and Suryani 2025), (Yanto and Sari 2025b).

Regarding small and medium culinary enterprises, a study by (Al-Mamary, 2025) reveals that the environmental consciousness of entrepreneurs, backing from customers, and the availability of eco-friendly technology play crucial roles in effectively adopting sustainable business practices. From a regional standpoint, a study by (Kee et al., 2023) focusing on Southeast Asia, particularly Indonesia, reveals that cultural influences and indigenous values significantly shape the adoption and execution of sustainable business methods among small and medium culinary enterprises.

Culinary SMEs in the Context of Sustainable Development

The culinary small and medium enterprise (SME) sector plays a crucial role in advancing the Sustainable Development Goals (SDGs). According to (Amanah et al., 2024), the food and beverage sector contributes significantly to global greenhouse gas emissions, water use, and soil degradation. Therefore, the transformation of this sector is key in achieving sustainable development targets. Within Indonesia's setting, a study by (Manzoor et al., 2024) demonstrates that small and medium culinary enterprises play a role in supporting Sustainable Development Goals (SDGs) through multiple approaches, including the promotion of responsible consumption (SDG 12), poverty reduction (SDG 1), and the preservation of terrestrial ecosystems (SDG 15).

(Fazle & Bin, 2024) in their research identified that sustainable food systems can be achieved through transformation at the micro level, including culinary SMEs. They highlighted the necessity of a comprehensive strategy that combines economic, social, and environmental considerations in managing culinary SMEs. Adopting sustainable business practices in this sector is inevitably met with numerous hurdles and difficulties. (Li et al., 2025) identified several key barriers, including financial limitations, lack of knowledge about sustainable practices, and resistance to change.

In the Indonesian context, research conducted by (Durrani et al., 2024) showed that culinary SMEs face specific challenges such as lack of access to green technology, lack of support from the government, and low consumer awareness of sustainable products. (Marlina, 2024) in their research emphasized that

these barriers can be overcome through a systematic approach and support from various stakeholders, including the government, financial institutions, and non-profit organizations.

Economic Impact of Green Business Model Implementation

Adopting eco-friendly business approaches in small and medium-sized culinary enterprises can yield substantial economic benefits. According to a study by (de Andrade et al., 2025) businesses embracing sustainability often achieve stronger financial outcomes over time. In the Indonesian context, research conducted by (Kurniawati & Widiyaningsih, 2024) shows that culinary SMEs that adopt green business models can increase profitability through operational efficiency, cost reduction, and access to broader markets. (Ciulli et al., 2022) in their research emphasized that green business models can create sustainable value through product innovation, market differentiation, and positive reputation building (Sari and Yanto 2025c), (Sari and Yanto 2025a), (Supriyanto et al. 2021a), (Supriyanto Suripto 2020), (M. B. S. Alexandri 2021), (M. B. Alexandri and Supriyanto 2022), (Supriyanto, Alexandri, and Novel 2022), (Supriyanto, Sari, and Pratama 2022).

Evaluating the effectiveness of an eco-friendly business framework demands a holistic method that incorporates financial, societal, and ecological dimensions. (Nica et al., 2025), (Dzvairo & Taft, 2024) developed a triple bottom line framework that can be used to measure the sustainable performance of culinary SMEs. In a practical context, research conducted by (Kusumawardani et al., 2024) shows that culinary SMEs can use simple indicators such as waste reduction, energy efficiency, and customer satisfaction to measure the success of green business model implementation. From an Indonesian perspective, research conducted by (Prasojo, 2024) developed performance indicators tailored to the local context, including the use of local raw materials, empowerment of surrounding communities, and contribution to the regional economy.

Business Innovation

The development of green business models in culinary SMEs requires appropriate and sustainable strategies. (Rodríguez-Rebés et al., 2024) identified several key strategies, including sustainable product innovation, production process optimization, and strategic partnership development. Within Indonesia, a study by (Nugraha & Rivaldo, 2025) revealed that culinary SMEs can adopt a green business model development strategy by following a step-by-step method, beginning with basic initiatives and progressing toward advanced eco-friendly technologies.

(Assoratgoon & Kantabutra, 2023) highlighted in their study that adopting a systemic perspective is crucial when establishing a green business model, as it necessitates changes across organizational structures, collaborative networks, and wider societal frameworks. For culinary SMEs to successfully integrate green business models, robust policy measures are essential. Similarly, (de Andrade et al., 2025) found that governmental regulations are instrumental in fostering an environment that supports

sustainability initiatives (Supriyanto et al. 2021b), (Supriyanto, Suropto, and Sari 2021), (Suropto Suropto, Maryani, and Sari 2023), (Yanto and Sari 2025b), (Sari and Yanto 2025b), (Maryani et al. 2023), (Yanto and Sari 2025a), (Yanto et al. 2025).

In the Indonesian context, research conducted by (Sungkawati, 2024) showed that government policies that support green business models in culinary SMEs may include fiscal incentives, training programs, and access to sustainable financing. In their seminal work, Porter and van der Linde (1995) demonstrated that well-designed environmental policies can drive innovation and enhance the competitive edge of culinary small and medium enterprises (SMEs) by adopting sustainable business practices (Maziriri, 2022).

Research Design

Based on the outlined conceptual framework, this research aims to investigate the intricate connection between green business models and sustainable development by focusing on two core mediating factors. Utilizing a quantitative methodology, the study employs a survey-based approach to evaluate hypotheses concerning how financial performance and environmental impact serve as intermediaries in linking the adoption of green business models to the realization of sustainable development goals.

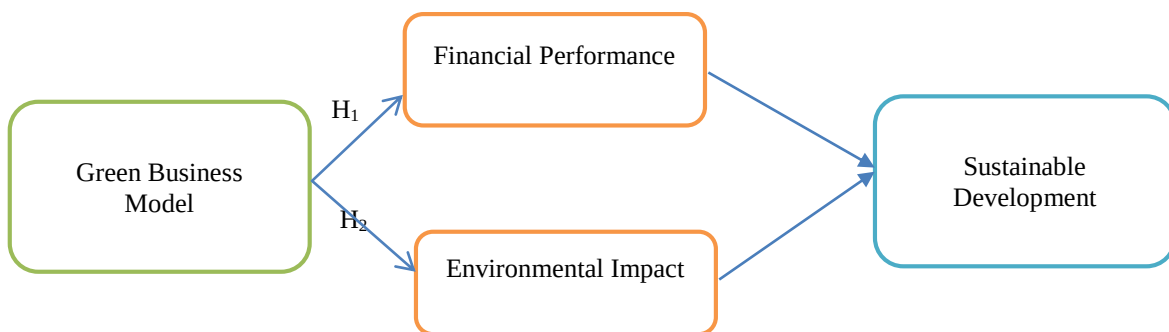


Figure 1. Conceptual Framework

METHOD

The study population consists of all culinary SMEs registered at the Lampung Province Cooperative and SME Office with the criteria that they have been operating for at least 2 years and have an official business license. The sampling technique used stratified random sampling based on districts / cities in Lampung. The sample size was set at 384 respondents using the Slovin formula at a confidence level of 95% and a margin of error of 5%. Sample inclusion criteria include: owners or managers of culinary SMEs who are at least 18 years old, have experience managing a business for at least 1 year, and are willing to participate in the study. Exclusion criteria include SMEs that are in the process of closing their business or experiencing bankruptcy.

The primary data was gathered by administering a structured questionnaire directly to participants through face-to-face surveys. The questionnaire was prepared based on green business model indicators

that have been validated in previous studies, including the dimensions of eco-efficiency, environmental management, and sustainable practices. The research instrument was a questionnaire with a Likert scale of 1-5 (strongly disagree to strongly agree) consisting of 45 questions divided into 5 main sections: demographic characteristics of respondents, implementation of environmentally friendly practices, waste management, energy efficiency, and economic impact. The validity of the instrument was assessed through content and construct validity, whereas reliability was evaluated using Cronbach's Alpha. Secondary data were obtained from the Lampung Provincial Statistics Agency, the Cooperatives and SMEs Office, and reports from related agencies that support contextual analysis of green business model implementation.

The data analysis was conducted systematically, employing both descriptive and inferential statistical methods. The first phase involved descriptive analysis to outline respondent characteristics and assess the extent of green business model adoption by computing the mean, median, mode, and standard deviation. Subsequently, inferential analysis was performed using Structural Equation Modeling (SEM), facilitated by AMOS 24.0, to examine causal relationships among variables. Before proceeding with SEM, preliminary assumption tests were executed, including the Kolmogorov-Smirnov normality test, linearity assessment, and outlier detection. The structural equation framework was then applied to evaluate how the implementation of a green business model influences sustainable development, with financial performance and environmental impact serving as mediating factors. Goodness of fit model was evaluated using Chi-square index, RMSEA, GFI, AGFI, CFI, and TLI.

FINDING AND DISCUSSION

Based on data analysis from 384 culinary SME respondents in Lampung in Figure 1, it was found that the majority of business owners (68,2%) were aged 31-45 years with 3-7 years of business experience (54,9%).

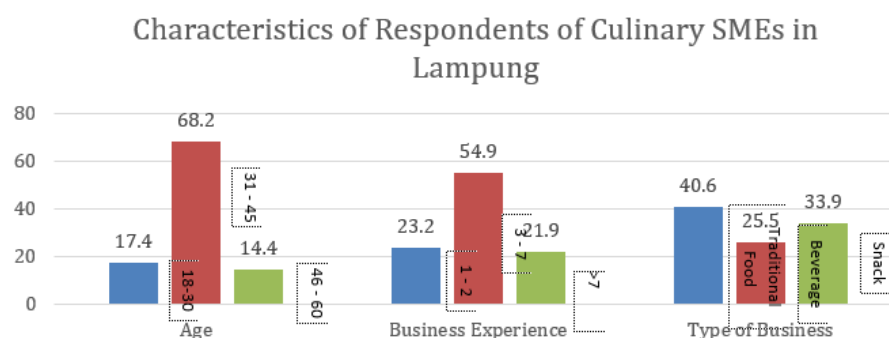


Figure 2. Chart Characteristics of Respondents of Culinary SMEs in Lampung

Table 1. Green Business Model Implementation Level

Dimension	Average Score	Standard Deviation	Category
Eco-efficiency	3,67	0,89	Height
Environmental Management	3,15	0,76	Currently
Sustainable Practices	2,91	0,83	Currently
Overall Average	3,24	0,82	Currently

Source: Data Processes (2025)

The descriptive analysis reveals that the adoption level of the green business model among culinary SMEs in Lampung falls within the moderate range, achieving an average score of 3,24 on a 1 to 5 scale.

Table 2. SEM Output Summary

Fitness Index	Value	Criteria	Conclusion
Chi-square/df	2.341	≤ 3	Good
RMSEA	0.063	≤ 0.08	Accepted
GFI	0.912	≥ 0.90	Good
AGFI	0.889	≥ 0.85	Accepted
CFI	0.931	≥ 0.90	Good
TLI	0.916	≥ 0.90	Good

Source: Data Processes (2025)

The Structural Equation Modeling (SEM) analysis indicates that the proposed research model demonstrates a strong goodness of fit, with a Chi-square / df value of 2.341 (≤ 3 , good criteria), RMSEA 0.063 (≤ 0.08 , acceptable criteria), GFI 0.912 (≥ 0.90 , good criteria), AGFI 0.889 (≥ 0.85 , acceptable criteria), CFI 0.931 (≥ 0.90 , good criteria), and TLI 0.916 (≥ 0.90 , good criteria).

Table 3. Factors Affecting Green Business Model Implementation

Factor	Coefficient (β)	T-Value	P-Value	Description
Internal Factors				
Management Commitment	0,452	7,234	0,000	Significant
Green Technology Access	0,387	6,012	0,000	Significant
HR Capability	0,298	4,567	0,000	Significant
External Factors				
Regulatory Pressure	0,234	3,456	0,021	Significant
Consumer Support	0,198	2,891	0,038	Significant
Access to Financing	0,167	2,345	0,067	Not Significant

Source: Data Processes (2025)

The regression analysis reveals that internal factors exert a more significant impact on the uptake of green practices compared to external factors. This indicates that managerial support, technological accessibility, and workforce expertise serve as the primary motivators for adopting sustainability initiatives. Meanwhile, external factors such as regulatory pressure and consumer support are also

significant, although their influence is smaller. Access to financing turned out to be insignificant, indicating that the availability of funds has not been a major determinant in the adoption of green practices. This finding confirms that companies rely more on internal capacity than external pressure in implementing sustainable initiatives.

Table 4. Mediation Analysis Results

Mediating Variable	Path Coefficient (β)	Significance (p)
Financial Performance	0,326	$p < 0,001$
Environmental Impact	0,411	$p < 0,001$

Source: Data Processes (2025)

Mediation analysis shows that the implementation of green business model positively affects sustainable development through improved financial performance ($\beta = 0.326$, $p < 0.001$) and improved environmental impact ($\beta = 0.411$, $p < 0.001$).

Table 5. Impact of Green Business Model Implementation

Aspects	Indicator	Before	After	Change (%)
Economy	Profitability (Million Rupiah)	8,4	10,4	23,4
	Operating Costs (Million Rupiah)	15,2	12,4	-18,7
	Monthly Revenue (Million Rupiah)	23,6	28,7	21,6
	Energy Efficiency (%)	42,1	69,9	27,8
Environment	Organic Waste Reduction (kg/month)	125,4	86,3	-31,2
	Energy Consumption (kWh/month)	234,5	169,2	-27,8
	Use of Environmentally Friendly Packaging (%)	23,4	67,8	+44,4
Social	Total Workforce (people)	2,1	4,4	+2,3
	Use of Local Raw Materials (%)	45,2	79,8	+34,6
	Local Community Involvement (%)	34,5	72,1	+37,6

Source: Data Processes (2025)

The identification of key challenges shows that limited capital, lack of technical knowledge, and lack of government support are significant barriers to the implementation of green business models.

Table 6. Challenges and Strategies for Green Business Model Development

Key Challenges	Percentage of Respondents (%)	Adaptive Strategies Developed	Success Rate (%)
Limited Capital	78,9	Strategic Partnerships with Local Suppliers	68,4
Lack of Technical Knowledge	71,2	Utilization of Simple Technology	72,1
Lack of Government Support	64,3	Sustainable Business Network Development	59,7

Consumer Resistance	52,6	Education and Promotion Programs	45,8
Limited Technology Access	48,7	Gradual Technology Adoption	63,2

Source: Data Processes (2025)

Discussion

Implementation of Green Business Model in the Context of Lampung Culinary SMEs

The study reveals that the adoption of the green business approach among culinary SMEs in Lampung scores 3.24, reflecting an intermediate stage, which suggests a disparity between eco-conscious intentions and their practical execution. The eco-efficiency dimension that obtained the highest score (3.67) indicates that culinary SMEs have adopted resource efficiency practices in response to economic pressures, in line with the findings of (Permatasari and Gunawan 2023) who emphasized that economic motivation is often the main driver in the adoption of sustainable practices in small businesses. However, the low score on the sustainable practices dimension (2.91) indicates that transformation towards a green business model still requires a more comprehensive systematic approach.

The characteristics of respondents, which are dominated by businesses aged 31-45 years with 3-7 years of experience, indicate that culinary SMEs in Lampung have entered a mature phase in the business cycle, where the need for innovation and differentiation is crucial. This result aligns with the study by (Yolanda and Famiola 2023) indicating that medium-experienced SMEs possess a stronger ability to implement sustainable practices compared to startups still prioritizing survival or well-established firms resistant to change.

Determinants of Green Business Model Implementation

The results of the SEM analysis confirm that management commitment ($\beta = 0.452$) is the most significant factor in the implementation of the green business model, supporting the argument of (Sungkawati 2024) that sustainable transformation requires strong leadership and long-term vision. This finding has important practical implications that SMEs development programs should prioritize building sustainable leadership capacity rather than focusing solely on technical or financial aspects.

Access to green technology as the second most important factor ($\beta = 0.387$) shows that technological barriers are still a major challenge for culinary SMEs in Lampung. This is different from the findings of (Yang, Ehrnström-Fuentes, and Wincent 2025) in other developing countries who found that financial factors are more dominant. This difference can be explained by the geographical context of Lampung, which has limited access to green technology compared to large industrial centers, thus requiring special strategies in technology transfer tailored to regional characteristics.

Interestingly, regulatory pressure ($\beta = 0.234$) shows a relatively moderate effect, indicating that the implementation of green business models in Lampung is driven more by internal motivation and market

opportunities than regulatory compliance. This result differs from the study by (Tang et al. 2024) which highlights the significant impact of regulation in promoting green innovation. However, it aligns with the realities of developing nations, where the implementation of environmental policies remains inadequate.

Economic Impact and Contribution to Sustainable Development

The 23.4% increase in profitability for SMEs implementing the green business model provides strong empirical evidence of the business case for sustainability. This finding supports (Esfahbodi et al. 2023) argument of a win-win solution between economic and environmental performance, while refuting the common perception that sustainable practices always require a trade-off with profitability. The 18.7% reduction in operating costs, mainly through energy efficiency and waste management, shows that a green business model can create competitive advantage through operational excellence.

The significant environmental impact, especially the 31.2% reduction in organic waste, has particular relevance in the context of Lampung, which faces serious problems in organic waste management. This result aligns with the study conducted by (Amanah et al. 2024) who identified the culinary sector as a significant contributor to waste generation, so the transformation of this sector can have a substantive environmental impact at the regional level.

The social aspect that shows an increase in employment of 2.3 people per SME and an increase in the use of local raw materials by 34.6% indicates that the green business model can be a catalyst for local economic development. This finding strengthens the argument of (Fazle and Bin 2024) on the importance of food system transformation at the micro level to achieve inclusive sustainable development.

Strategic Challenges and Adaptations

The identification of limited capital as the main challenge (78.9% of respondents) confirms the findings of (Durrani et al. 2024) on financial barriers in implementing green business models in SMEs. However, the adaptive strategies developed by SMEs in Lampung show unique creativity and resilience. Strategic partnerships with local suppliers as a response to capital constraints (68.4% success rate) show that SMEs can overcome resource constraints through a collaborative approach that utilizes local geographical and cultural advantages.

The utilization of simple yet effective technologies with a success rate of 72.1% indicates that appropriate technology is more relevant to SMEs than the high-tech solutions often promoted in the literature. This finding provides an important insight that innovation in sustainability does not always require advanced technology, but can be achieved through creative adaptation of accessible and affordable technology.

Theoretical and Practical Contributions

This study advances green business model theory within developing nations by uncovering implementation approaches tailored to regional conditions. The finding that geographical and cultural factors of Lampung agro-industry catalyze the adoption of sustainable practices enriches the literature on contextual factors in sustainable business model innovation. The concept of "locally embedded sustainability" that emerged from this research shows that green business models cannot be implemented uniformly, but require adaptation to specific local contexts.

From a practical perspective, the incremental framework developed in this research provides a realistic roadmap for culinary SMEs to transform their business models. The incremental innovation approach, which starts from simple practices such as waste reduction and energy efficiency, then progresses to the implementation of more sophisticated green technologies, has proven to be more effective than radical transformation, which often fails due to the limited capacity of SMEs.

The policy implications arising from this study emphasize the importance of government support that is not only in the form of regulations and financial incentives, but also capacity building, technology transfer, and market facilitation. The finding that consumer support is still limited ($\beta = 0.198$) indicates the need for public education programs to increase green consumerism as a demand-side driver in green business model transformation.

CONCLUSIONS

The research findings indicate that culinary Small and Medium Enterprises (SMEs) in Lampung have moderately adopted green business practices, achieving an average implementation score of 3.24. This finding indicates that although awareness of sustainable business practices has begun to grow, its implementation in the field still needs to be improved. The eco-efficiency dimension recorded the highest score (3.67), indicating that SMEs have prioritized resource efficiency as an effort to reduce operational costs. However, the relatively low sustainable practices dimension (2.91) suggests that a more holistic approach is needed to drive transformation towards truly sustainable businesses. Internal factors, such as management commitment, access to green technology, and HR capabilities, proved more influential than external factors such as regulatory pressure or consumer support. This confirms that the internal capacity of SMEs is key in adopting green practices. The implementation of green business models also has significant positive impacts, including increased profitability, reduced operational costs, reduced organic waste, and increased employment and use of local raw materials. However, challenges such as limited capital, lack of technical knowledge, and limited government support are the main obstacles. Adaptive strategies developed by SMEs, such as partnerships with local suppliers and utilization of *seder* technology, are the main barriers. Adaptive strategies developed by SMEs, such as partnerships with local suppliers and utilization of simple technologies, show great potential to overcome these constraints.

To strengthen the implementation of green business models in culinary SMEs in Lampung, concrete steps are needed from various stakeholders. First, improving management and human resource capacity through continuous leadership training and technical assistance can help SMEs overcome knowledge limitations. Second, access to affordable green technology needs to be facilitated by local governments, for example through technology transfer programs or cooperation with industry. Third, supportive policies, such as fiscal incentives and consumer education campaigns, can create a conducive environment for green business growth. Fourth, the development of collaborative networks among SMEs, academics and NGOs will strengthen the exchange of knowledge and resources. In conclusion, additional studies should investigate creative financing approaches and assess how sustainable methods influence both corporate durability and societal welfare over time. With synergy between SMEs, government, academia, and the community, the transformation towards sustainable business is not only possible, but can also be a catalyst for green economic development in Lampung.

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