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EXPLORING GREEN BUSINESS PRACTICES IN INDONESIAN SMEs: A DESCRIPTIVE QUALITATIVE STUDY

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ABSTRACT

Objectives: This study aims to examine in depth the application of green business practices in small and medium enterprises (SMEs) in Indonesia, focusing on the level of understanding, motivation, challenges, and impacts resulting from the implementation of sustainable practices in the local economic context.

Research Design & Methods: Using a descriptive qualitative approach, data were collected through in-depth interviews with 12 SMEs actors representing various sectors, including food and beverages, fashion, crafts, and creative services. Thematic analysis was conducted to identify patterns related to motivation, practices, barriers, and outcomes.

Findings: The study concludes that green business implementation among Indonesian SMEs is diverse, shaped by both internal and external motivations. Despite facing structural, technical, and financial challenges, applying sustainability principles yields notable economic, social, and environmental benefits. This makes green business an effective strategy to enhance competitiveness and support sustainable development.

Implications & Recommendations: This study recommends the importance of strengthening the supporting ecosystem through cross-sector collaboration between the government, financial institutions, academics, and industry players. Policy interventions oriented towards green incentives, technical assistance, and ease of access to financing will accelerate the transition of SMEs towards sustainable business practices.

Contribution & Value Added: This study provides empirical contributions to the literature on SMEs transformation in the context of the green economy in developing countries, particularly Indonesia. In addition, the results enrich the understanding of SMEs adaptive strategies in facing resource constraints while innovating towards environmental and social sustainability.

Keywords: Green Business, Sustainability, Sustainable Entrepreneurship

JEL codes: Q56, L26, M14

Article type: research paper

INTRODUCTION

Small and medium-sized enterprises (SMEs) in Indonesia play an important role in the country's economic development. Indonesia has more than 64 million micro, small, and medium enterprises (SMEs) spread across all regions. These enterprises are the mainstay of the national economy through their contribution to gross domestic product (GDP), job creation, and local economic development (Suryadi, 2024). Despite their significant role, SMEs face pressure from environmental issues and growing sustainability demands, including climate change, stricter environmental regulations, and consumers increasingly seeking environmentally friendly products. Based on research conducted by FEB UGM and Bank Indonesia, around 87.81% of SMEs in Indonesia have not fully implemented green business practices. In comparison, the rest

(12.19%) have only partially adopted them (not comprehensively) ([Universitas Gadjah Mada, 2025](#)).

The implementation of green business practices among SMEs still faces various complex obstacles, particularly related to limited financial resources, technology, and access to adequate policy support. Many SMES players find it difficult to invest in environmentally friendly technologies due to high initial costs and the lack of adequate green financing infrastructure. In addition, the regulatory framework is not yet fully established, and the lack of clarity and effectiveness of government incentives are factors that hinder the adoption of sustainable practices. On the other hand, a lack of technical knowledge and collaborative networks also slows down the transformation process towards green business ([Omowole et al., 2024](#)). However, support in the form of pro-environmental government policies, access to financial incentives, and strategic partnerships between business actors, financial institutions, and the government can be important catalysts in accelerating this transition. The implementation of green business practices has been proven to improve public image and compliance with environmental regulations, and to provide long-term benefits such as operational cost efficiency, increased competitiveness, and a stronger market position amid growing consumer awareness of sustainable products ([Abdelwahed et al., 2023](#)).

The implementation of green business practices focuses on reducing negative impacts on the environment by improving resource efficiency and developing sustainable supply chain systems. In Indonesia, particularly in the furniture manufacturing sector, which heavily relies on natural raw materials, an environmentally friendly innovation approach is becoming increasingly important to maintain a balance between economic growth and environmental preservation. This practice emphasizes using materials that are not only less polluting but also have a longer product life cycle and are easier to recycle. In addition, product design focuses on energy efficiency and minimizing production waste through the application of eco-innovation concepts that encourage the creation of sustainable technologies and production processes, as well as Green Business Process Management (Green BPM) that ensures every stage of the business process is carried out in accordance with environmentally friendly principles ([Fernando et al., 2016](#); [Sohns et al., 2023](#)).

Green networks have been recognized in Indonesia as one of the main drivers of environmentally friendly innovation in the small and medium enterprise sector. These networks create a collaborative ecosystem among businesses, government, research institutions, and consumers, supporting the exchange of knowledge, technology, and best practices in sustainable business management. In addition to networking, the success of green innovation is also influenced by pro-environmental regulations, advances in clean production technology, and market dynamics that increasingly demand environmentally friendly products ([Fernando et al., 2016](#)). By adopting this approach, SMEs in Indonesia have great potential to become the driving force of the green economy, not only through economic value creation but also through contributions to environmental preservation and carbon footprint reduction. In line with this context, this study aims to explore the opportunities and challenges of implementing green business practices in SMEs in Indonesia. It focuses on the real experiences of local entrepreneurs to understand the factors that support or hinder the transformation towards a more sustainable and globally competitive business model.

LITERATURE REVIEW

Green Business Concept

Green business is an approach that focuses on implementing sustainable practices aimed at environmental sustainability without neglecting economic profitability. This concept requires the integration of environmentally friendly principles into all business operational processes, from production and distribution to resource management. According to various international institutions such as the United Nations Environment Program (UNEP) and the Organization for Economic Co-operation and Development (OECD), green business encompasses systematic efforts to minimize negative impacts on the environment through energy efficiency, wise waste management, and the use of renewable resources ([Barakat et al., 2023](#); [Kholijah, 2024](#)).

One key aspect of green business is the implementation of environmentally friendly practices that include efforts to reduce carbon emissions, minimize waste, and conserve natural resources. According to [Kholijah \(2024\)](#), these measures not only contribute to environmental preservation but also help companies achieve operational efficiency through energy savings and production process optimization. In line with this, [Barakat et al., \(2023\)](#) emphasize that the implementation of green practices can strengthen a company's reputation in the public eye and increase its appeal to consumers who are highly environmentally conscious. Thus, environmentally friendly practices are not merely a form of corporate social responsibility, but a business strategy that provides a sustainable competitive advantage.

The fundamental principles of green business include resource efficiency, waste reduction, environmentally friendly innovation, and economic sustainability. These principles are interrelated in creating an environmentally conscious business system. Resource efficiency requires the optimization of raw materials, energy, and water use to reduce excessive consumption and carbon emissions. Meanwhile, waste reduction emphasizes the importance of applying the principles of reduce, reuse, recycle through clean production strategies, material recycling, and responsible organic waste management, such as composting. In terms of innovation, green business encourages the emergence of green technology and new business models that prioritize energy efficiency and environmentally friendly materials. Economic sustainability plays a role in ensuring that every environmental initiative supports the company's financial performance, thereby balancing ecological responsibility with long-term business profits ([Kumari, 2023](#); [Sarkar et al., 2020](#)).

The concept of sustainable entrepreneurship is an innovative approach in the business world that seeks to provide integrated solutions to social, environmental, and economic challenges through value-added business activities. Unlike conventional entrepreneurship, which is primarily oriented towards financial gain, this approach emphasizes a balance between economic growth, social welfare, and environmental sustainability. In practice, sustainable entrepreneurship integrates sustainability values into business strategies, such as the use of renewable resources, empowerment of local communities, and the creation of innovations that support the reduction of ecological impacts. Thus, sustainable entrepreneurs not only act as economic drivers but also as agents of social change, contributing to sustainable development at both the local and global levels ([Avelar et al., 2024](#); [Schaltegger & Wagner, 2011](#)).

The implementation of green business practices not only plays a role in addressing ecological issues but also provides a competitive advantage for companies. Integrating sustainability principles into operational activities helps improve efficiency, reduce production costs, and strengthen the company's reputation in the eyes of consumers and stakeholders. Furthermore, more industries are realizing the importance of embedding sustainability values into their business strategies to remain relevant and competitive amid growing consumer awareness of environmental issues. Thus, sustainability is no longer merely a social responsibility but a core strategy that determines a company's competitiveness in the green economy era ([Cheema & Javed, 2017](#); [Sarkar et al., 2020](#)).

Green Business In SMEs

Green business in the context of micro, small, and medium enterprises (SMEs) is a business management strategy oriented towards sustainability, focusing on minimizing negative impacts on the environment while improving operational efficiency. This concept includes not only waste reduction and energy efficiency but also the management of environmentally friendly raw materials, the optimization of production processes to reduce carbon emissions, and the implementation of sustainable supply chain systems. By adopting these principles, SMEs strive to create a balance between economic goals and ecological responsibility, where green business practices can become a long-term strategy to strengthen competitiveness, meet the demands of increasingly environmentally conscious consumers, and support the achievement of sustainable development goals ([Omowole et al., 2024](#); [Sohns et al., 2023](#)).

Despite facing various resource constraints, small and medium-sized enterprises (SMEs) have great potential to gain strategic benefits through the implementation of green business practices. The implementation of sustainability principles such as energy efficiency, better waste

management, and the use of environmentally friendly materials can help SMEs reduce operational costs and increase productivity. In addition, these practices also strengthen competitiveness in a market that increasingly demands transparency and environmental responsibility, while ensuring compliance with government regulations oriented towards sustainability. The application of green business not only has a positive impact on the environment but also creates a strong foundation for SMEs to grow sustainably, innovatively, and adaptively in response to global market changes (Omowole et al., 2024).

Green businesses place innovation at the core of their transformation strategy by redesigning conventional business models to be more sustainability-oriented and environmentally friendly. This approach requires companies to consider the entire product life cycle—from design, production, and distribution to post-consumption—emphasizing the principles of reduce, reuse, and recycle as the basis for operations (Rodrigues & Franco, 2023). The shift towards green business practices positions small and medium-sized enterprises (SMEs) as strategic actors in driving inclusive and sustainable green economic growth. By applying environmentally friendly innovations, such as energy efficiency, renewable resources, and responsible waste management, SMEs not only reduce pressure on the environment but also strengthen their competitiveness and resilience amid global market changes. This transformation enables SMEs to contribute significantly to the achievement of sustainable development goals (SDGs), particularly in the areas of industrial innovation, sustainable consumption and production, and action on climate change (Tereshchenko et al., 2023).

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) provides a strong conceptual foundation for analyzing the factors that influence the adoption of green business practices among SMEs. According to TPB, a person's behavior does not arise spontaneously but results from intentions influenced by three main components: attitudes towards behavior, subjective norms, and perceptions of behavioral control. In the context of green business implementation, this theory explains that entrepreneurs' decisions to implement environmentally friendly practices are strongly influenced by personal views on the benefits of sustainability, social pressure from customers or the business community, and beliefs in their abilities and resources to implement these practices.

Various studies applying the Theory of Planned Behavior (TPB) show that the attitudes of SMES owners towards environmental sustainability issues significantly influence their intention to adopt green business practices. Business owners who view sustainability as an important part of their business values and strategy tend to have a stronger motivation to implement green measures. In addition, subjective norms - the perception of how important individuals or groups value the action - shape the decision. Social pressure from peers, customers, or the business community often serves as a key driver in the adoption process. This phenomenon is further reinforced by mimetic and normative pressures, where SMES owners are encouraged to emulate green practices successfully implemented by competitors or leading industry players in an effort to maintain business legitimacy and competitiveness (Omowole et al., 2024; Uhlaner et al., 2012).

The perceived behavioral control aspect within the Theory of Planned Behavior (TPB) framework plays an important role in determining the extent to which SMEs can implement green business practices. This dimension reflects an individual's perception of the ease or difficulty of performing a particular action, which in the context of green business is closely related to the availability of resources, technical capabilities, and financial support. Many SMEs face limitations in access to green technologies, investment capital, and managerial knowledge needed to implement sustainable innovations effectively. These barriers can reduce the level of perceived control, so while the intention to transform towards green business is high, its realization is often hampered by structural and operational factors (Chien et al., 2022; Rodrigues & Franco, 2023). Therefore, understanding the role of perceived behavioral control is important for policymakers and business stakeholders to design interventions that can strengthen the capacity of SMEs, whether through training, financial incentives, or the provision of supporting infrastructure to encourage the adoption of sustainable business models.

METHODS

This study employs a qualitative approach, using in-depth interviews to understand the phenomenon of green business implementation in SMEs comprehensively. A qualitative approach was chosen because it allows researchers to explore the experiences, perceptions, and motivations of SMEs actors in greater depth, as well as to explore the meaning behind the sustainability practices and strategies they implement in specific social and economic contexts (Bickman & Rog, 2009). The main data collection technique involved conducting in-depth interviews with SMES owners or managers using semi-structured interview guidelines. These guidelines allowed for flexibility in exploring new issues that arose during the interview process. In addition to interviews, the researchers conducted non-participatory observations of business activities related to green practices. They collected documentary data, including business profiles, activity reports, and promotional materials that demonstrated the application of sustainability principles. Using a descriptive qualitative approach, data were collected from 12 SMEs representing the food and beverage, fashion, crafts, and creative services sectors. The collected data were then analyzed using thematic analysis to identify key patterns related to the motivations, practices, barriers, and outcomes of green business implementation among SMEs.

The type of research used is a qualitative descriptive study, which focuses on describing phenomena as they are in the field without intervening in the conditions or behavior of the subjects. This approach is considered relevant for examining the application of green business principles in the real context of Indonesian SMEs, especially in revealing the internal and external factors that influence the success and obstacles to its implementation. This study also seeks to build an empirical understanding based on direct evidence from local entrepreneurs who have attempted to implement environmentally friendly practices. The research subjects are local SMEs actors from various sectors, including culinary, handicrafts, and services, who demonstrate a commitment to environmental sustainability through the use of environmentally friendly materials, waste management, or energy efficiency. Informants were selected purposively based on the following criteria: (1) have been in operation for at least three years, (2) have experience or knowledge of green business practices, and (3) are willing to provide information openly through interviews.

To ensure data validity, this study applies four trustworthiness criteria as proposed by Enworo (2023), namely credibility, transferability, dependability, and confirmability. Credibility is maintained through triangulation of data sources (interviews, observations, and documentation) and member checking with informants. Transferability is achieved by providing detailed contextual descriptions so that the research results can be applied in similar contexts. Dependability is maintained by systematically recording the research process through an audit trail, while confirmability is ensured by maintaining the objectivity of the researcher and avoiding interpretive bias. From a research ethics perspective, the entire process is conducted in accordance with the principle of informed consent, where each informant is provided with an explanation of the research objectives and gives their voluntary consent. The identity of informants is kept confidential, and all data collected is used solely for academic purposes.

RESULT

Informant Profile

To gain a comprehensive understanding of green business practices among SMEs actors, this study involved 12 key informants who are business owners and managers from various sectors, such as food and beverages, fashion, handicrafts, and creative services. Informants were selected using purposive sampling, with the main criterion being SMEs that have implemented some or all of the principles of sustainable business, such as the use of environmentally friendly materials, energy efficiency, and business waste management.

Table 1. Demographic Profile and Characteristics of Informant SMEs

No	Years In Operation	Total Employees	Owner's Gender	Age (Years)	Type of Business
1.	5	10	Female	32	Food & Beverages
2.	4	7	Male	38	Fashion
3.	6	12	Female	41	Handicrafts
4.	3	5	Female	29	Local Cuisine
5.	7	15	Female	43	Eco-Friendly Products
6.	5	9	Male	36	Printing & Design
7.	4	6	Female	28	Accessories & Souvenirs
8.	6	10	Female	35	Eco-Friendly Fashion
9.	5	8	Female	39	Cafes
10.	7	20	Male	45	Creative Services
11.	3	5	Female	30	Traditional Beverages
12.	6	11	Female	42	Recycled Products

Based on the table, the majority of SMEs informants have been operating for 3–7 years, indicating that most businesses are in the growth and consolidation stage. At this stage, SMEs players generally already have a more stable managerial system and are beginning to develop innovations in production and marketing processes. The number of employees ranging from 5 to 20 people also strengthens their position in the small and medium enterprise category, as classified by the Indonesian Ministry of Cooperatives and SMEs. This condition indicates that SMEs players are starting to have sufficient human resources capacity to conduct operational activities sustainably, while also having room to adopt environmentally friendly practices in their business processes.

Demographically, of the 12 informants, 9 were women (75%) aged 28–45 year, indicating that women have an increasingly dominant role in sustainability-oriented entrepreneurship. Women's involvement in this sector not only strengthens the family economy but also contributes to the development of social and environmentally based innovations. This is evident in various sectors, such as culinary, fashion, handicrafts, environmentally-friendly products, and creative services. The diversity of these sectors shows that green business principles can be applied across industries, with each business adapting its practices to its own characteristics and potential. For example, some informants implement innovations such as the use of natural raw materials, energy-efficient production systems, recyclable packaging, and ethical marketing strategies to maintain a balance between economic profits and environmental responsibility.

SMEs Actors' Understanding of Green Business

The analysis of the 12 informants shows variations in understanding of green business that fall into three categories: Basic Understanding (4 informants; 33.3%), Moderate Understanding (5 informants; 41.7%), and Comprehensive Understanding (3 informants; 25%). The level of understanding correlates with the observed pattern of practice, ranging from minimal concrete actions to more comprehensive business strategies aimed at environmental, economic, and social impacts.

1. Category 1 - Basic Understanding (4 informants; 33.3%)

Characteristics	<ul style="list-style-type: none"> a. Simple definition: green business is understood as “business that does not damage the environment” or “uses natural materials” b. Focus on general concepts without any description of implementation (no idea of concrete steps or indicators of success) c. Actual practices are minimal or take the form of ad-hoc actions (e.g., occasionally using natural materials, sometimes separating waste if possible)
Representative quote	“Green business is a business that does not damage the environment, uses natural ingredients.” - Food SMEs informant.
Interpretation	This group requires structured awareness-raising interventions, examples of simple practices that can be implemented immediately, and information on short-term economic benefits (e.g., cost savings) to encourage adoption.

This group requires structured awareness-raising interventions, examples of simple practices that can be implemented immediately, and information on short-term economic benefits (e.g., cost savings) to encourage adoption. The low level of understanding is likely influenced by limited access to reliable information about sustainable practices, the absence of targeted training or government-supported capacity-building programs, and the perception that green business requires high costs or specialized knowledge. In many cases, SMEs rely on informal knowledge networks, leading to fragmented or superficial comprehension of sustainability concepts.

2. Category 2 - Moderate Understanding (5 informants; 41.7%)

Characteristics	<ul style="list-style-type: none"> a. Understand concrete practices: waste reduction, use of recycled packaging, electricity/water efficiency, and choosing more sustainable raw materials. b. Have implemented some operational measures, although they are often small-scale and not yet integrated into all business processes c. Motivations vary: a combination of market (consumer) pressure, cost savings, and personal values
Representative quote	“I understand green business is about reducing waste, using recyclable packaging, saving electricity and water, and choosing sustainable raw materials.” - Informant SMEs fashion.
Interpretation	This group is ready to implement more advanced practices-they need technical guidance, access to suppliers of green materials, and incentives/standardization (e.g., simple labels/certification) to spread and standardize practices.

In this category, SMEs demonstrate a more mature understanding of the green business concept than the previous group, as they not only grasp the general definition but are also able to articulate and implement concrete practices such as waste reduction, the use of recycled packaging, energy and water efficiency, and the selection of more environmentally friendly raw materials. However, these actions remain partial and not yet fully integrated across the entire business process, with motivations driven by a mix of market pressures, operational cost savings, and personal environmental values. SMEs in this group are positioned in a transitional stage toward more systematic sustainability practices and show readiness to adopt more advanced measures but still require support in the form of clearer technical guidance, better access to affordable eco-friendly material suppliers, and simple incentive mechanisms or basic labeling and certification schemes to ensure that their green practices become more sustainable, standardized, and impactful in enhancing both environmental performance and business competitiveness.

3. Category 3 - Comprehensive Understanding (3 Informants; 25%)

Characteristics	<ul style="list-style-type: none"> a. Understand green business holistically: a balance of economic, social, and environmental aspects. b. Practices have moved towards strategy integration (e.g., selecting sustainable suppliers, thinking about community impacts, and long-term cost-benefit recording) c. Have a sustainability vision and often utilize sustainability as a competitive advantage
Representative quote	"Green business is not only about the environment, but also how our business can be economically sustainable and have a positive impact on the surrounding community." - Informant Printing & Design.
Interpretation	Actors in this category have the potential to become champions - they can be engaged for mentorship, case studies, pilot programs, or joint marketing collaborations (e.g., local labels/sustainable brand stories)

SMEs in this category demonstrate a more developed and practical understanding of green business, as they are not only familiar with the general concepts but also able to implement concrete actions such as waste reduction, the use of recyclable packaging, efficiency in electricity and water consumption, and the selection of more sustainable raw materials. Although these practices have begun to take shape, they remain limited in scope and are not yet integrated into all operational aspects of the business, with motivations generally influenced by consumer expectations, the desire to reduce costs, and personal environmental values. Given this transitional position, these SMEs are ready to adopt more advanced sustainability strategies but still require targeted support such as clearer technical guidance, better access to affordable eco-friendly suppliers, and the availability of simple incentive systems—such as labeling schemes or basic certification—to help standardize and strengthen the long-term impact of their green practices.

Motivations for Implementing Green Business

Based on interviews with 12 informants, four main categories of motivations for SMES actors in implementing green business practices were found: (1) personal values and environmental awareness, (2) market demands, (3) cost efficiency, and (4) competitive differentiation. These motivations indicate that the decision to shift to green practices is not solely an economic factor, but also relates to personal values and long-term business strategies.

1. Personal Values and Environmental Awareness (8 informants; 66.7%)

The majority of informants indicated that the internal drive of concern for environmental sustainability was the main driver for implementing green practices. This motivation stems from personal values, direct experience with environmental issues (such as increasing plastic waste), and a sense of moral awareness as a business actor, aiming to make a positive contribution to society and nature.

"I started with concerns about the increasing amount of plastic waste. As a business owner, I feel I have a responsibility to help reduce this problem." - SMEs café informant.

Thematic analysis:

This motivation signals the emergence of an environmental ethics orientation in micro business practices. SMEs players with this motivation tend to implement green practices consistently, even though they do not always receive direct economic benefits. They also act as early adopters who can serve as examples for other actors. In the context of the Theory of Planned Behavior, this dimension relates to attitude toward behavior - a positive attitude toward environmentally friendly practices that fosters a strong intention to behave in an environmentally friendly manner.

2. Market Demand (6 informants; 50%)

Most informants acknowledged that increasing consumer awareness of environmentally friendly products influenced their decision to adopt green business principles. Market demand for sustainable products creates competitive pressure as well as new marketing opportunities.

"Consumers are now smarter, they ask where the raw materials come from, whether the packaging can be recycled or not. If we don't care about the environment, we could lose the market." - Handicraft SMEs informant.

Thematic analysis:

This market motivation shows that green consumerism is starting to influence the behavior of SMEs in Indonesia. Businesses responsive to this trend adjust their products and production processes to meet the expectations of modern consumers. This factor relates to the subjective norm dimension in the Theory of Planned Behavior, where social norms and external pressures shape intentions to act according to market expectations.

3. Cost Efficiency (4 informants; 33.3%)

Some informants realized that green practices also bring financial benefits, especially in energy efficiency, waste management, and more efficient use of resources. Although initially considered expensive, implementing sustainability principles has proven to reduce operational costs in the medium term.

"At first I thought green business was expensive, but it turns out that by reducing waste and saving energy, my production costs have dropped by 15%." - Food SMEs informant.

Thematic analysis:

This motivation is pragmatic and shows a shift in the view that green business is not only a moral obligation, but also a rational economic strategy. This is in line with previous research findings that sustainability practices can improve efficiency and long-term profitability (Matiiuk & Liobikienė, 2021). SMEs players motivated by this are more easily convinced by empirical evidence of cost savings and financial benefits.

4. Competitive Differentiation (7 informants; 58.3%)

Some SMEs players view green business as a marketing strategy to create a competitive advantage. The "eco-friendly" label or image is considered to increase product selling points and strengthen customer loyalty.

"With the 'eco-friendly' label, my products have more selling points. Consumers are willing to pay more because they feel they are contributing to the environment." - Fashion SMEs informant.

Thematic analysis:

This motivation shows that green branding is a strategic instrument to expand the market. Forward-thinking SMEs players utilize green practices as part of their brand identity and value-added products. This strategy also strengthens the position of SMEs in an increasingly competitive market, while opening up opportunities to enter the premium or export consumer segments.

Green Business Practices Implemented

The results of in-depth interviews with 12 SMEs players show that green business implementation has covered various operational aspects, from the use of environmentally friendly raw materials to green marketing strategies. These practices demonstrate varying levels of awareness and concrete actions, ranging from simple efficiency-based measures to strategic approaches integrated throughout the entire business value chain.

1. Use of Environmentally Friendly Raw Materials (10 informants; 83.3%)

Most SMEs players have replaced conventional raw materials with more environmentally friendly materials for reasons of health, quality, and sustainability.

- a. Food SMEs: use organic ingredients and avoid chemical preservatives.
- b. Fashion SMEs: switching to organic fabrics, natural dyes, and recycled materials.

c. Traditional Beverage SMEs: using natural ingredients without artificial sweeteners, synthetic dyes, or chemical preservatives.

"All my raw materials come from local farmers who grow organically. It's a little more expensive, but good quality and environmentally friendly." - Food SMEs informant.

Thematic analysis:

This step shows a sustainability-driven production orientation, where businesses start to consider the ecological footprint of raw materials and their impact on consumer health. In addition, collaborating with local farmers strengthens the social dimension of sustainability by economically empowering local communities. This practice is in line with the principles of green supply chain management ([Schrippe & Ribeiro, 2018](#)), which emphasizes sustainability-based decision-making from the early stages of the supply chain.

2. Environmentally Friendly Packaging (11 informants; 91.7%)

Almost all informants have innovated in the use of biodegradable, recyclable, or reusable packaging. Some even encourage consumer participation by offering incentives such as discounts to bring their own containers.

"I replaced all plastic with paper bags and boxes made from recycled paper. For drinks, I encourage customers to bring their own tumblers by offering discounts." – Informant from a cafe SMEs.

Thematic analysis:

The replacement of plastic packaging with environmentally friendly materials reflects awareness of plastic pollution issues and adaptation to increasingly strict environmental regulations. In addition, customer incentive strategies demonstrate a collaborative approach that strengthens consumer engagement with green practices. In the context of sustainable marketing, this reinforces the eco-brand image ([Bui et al., 2017](#)).

3. Waste Minimization (9 informants; 75%)

Most SMEs have implemented the zero-waste principle by processing production leftovers into new products (upcycling) or minimizing waste from the design stage.

"I process fabric scraps from production into other products such as scrunchies or pouches. Almost no waste is discarded." – Fashion SMEs informant.

Thematic analysis:

This practice demonstrates the application of the circular economy at the micro level, where waste is considered a potential resource. For the fashion and food sectors, recycling and waste management efforts are innovations that are not only environmentally friendly but also economically valuable. These findings support the research by [da Silva Lima et al., \(2019\)](#) which highlights the role of SMEs in creating a circular economy system based on product innovation.

4. Energy and Water Efficiency (7 informants; 58.3%)

Some informants implemented energy-saving technologies such as LED lights, solar panels, and water conservation systems. Some even reported a direct impact on operational cost savings.

"I installed solar panels in my studio, which saved 40% on electricity. The initial investment was large, but now I have recouped my costs." – Informant from a craft SMEs.

Thematic analysis:

The implementation of energy efficiency indicates an awareness that sustainability not only impacts the environment but also long-term profitability. This strategy is in line with the principle of eco-efficiency, which emphasizes increasing economic value while reducing environmental impact. In addition, the willingness to make an initial investment shows the emergence of a long-term mindset among progressive SMEs players.

5. Local Production and Short Supply Chains (6 informants; 50%)

Several SMES actors implement local sourcing strategies by prioritizing nearby suppliers to reduce transportation emissions and support the local economy.

"I prioritize nearby suppliers, which not only saves on shipping costs but also reduces emissions. Plus, it helps the local economy." – Food SMEs informant.

Thematic analysis:

This practice demonstrates awareness of the carbon impact of logistics activities. In addition to environmental aspects, this practice also strengthens social and economic networks between producers and local communities. This approach is in line with the concept of local sustainability networks, where collaboration based on geographical proximity is key to supply chain efficiency and resilience (Alvarino et al., 2017).

6. Green Marketing (8 informants; 66,7%)

Many SMEs players have begun communicating the sustainability value of their products through green marketing strategies on social media, websites, and packaging.

"On Instagram and product packaging, I always talk about the eco-friendly manufacturing process. This has become a unique selling point." – Informant from an accessories & souvenirs SMEs.

Thematic analysis:

Green marketing practices strengthen the emotional connection between brands and consumers by highlighting ethical and sustainability values. This is in line with the rapidly growing trend of conscious consumerism, especially among young consumers (Yasmin et al., 2020). This strategy can increase brand trust and customer loyalty towards green products.

Challenges and Obstacles

Although most SMEs actors are highly motivated to implement green business practices, they face significant challenges in the implementation process. Based on the interview results, there are six main categories of obstacles faced by the informants.

1. Capital Constraints (10 informants)

Ten informants revealed that the biggest obstacle to implementing environmentally friendly practices is capital constraints. The transition to green production processes, such as the use of environmentally friendly packaging materials or energy-efficient technologies, requires a relatively high initial investment. This creates a dilemma between maintaining business sustainability and maintaining price competitiveness.

"Environmentally friendly packaging costs three times as much as regular plastic. I have to raise the price of my products, but I'm worried that customers will leave," said an SMEs informant in the food industry.

2. Limited Access to Raw Materials (7 informants)

Seven informants reported difficulties in obtaining affordable and stable supplies of green raw materials, especially for businesses in rural areas. Underdeveloped supply chains hinder the continuity of environmentally friendly production.

"I have trouble finding suppliers of organic fabric at affordable prices. Sometimes I have to order from outside the city, which makes it expensive," said an informant from a fashion SMEs.

3. Lack of Technical Knowledge (6 informants)

Six informants highlighted the lack of technical knowledge in applying green business principles. Despite their intention to transform, many businesses do not yet understand the concrete steps involved in implementing environmentally friendly practices.

"I want to implement more green practices, but I don't know where to start. I need guidance and training," said a craft SMEs informant.

4. Low Consumer Awareness (5 informants)

Five informants assessed that market demand for environmentally friendly products is still limited. Most consumers are still oriented towards low prices without considering sustainability aspects. This condition poses a challenge for SMEs to balance green idealism and market realities.

"There are still many consumers who prefer cheap products even if they are not environmentally friendly. They are not yet aware of the importance of sustainability," said an SMEs food informant.

5. Lack of Government Support (8 informants)

Eight informants assessed that government support is still not optimal. The lack of capital assistance programs, tax incentives, or technical training makes it difficult for SMEs to adopt a sustainable green business model.

"There are no special incentives for SMEs that implement green business. Meanwhile, we need capital assistance or tax breaks," said an informant from a fashion SMEs.

6. Complex Certification and Standards (4 informants)

Four informants also highlighted that the process of certifying environmentally friendly products, such as organic certification, requires complex administrative procedures and costs. For SMEs with limited resources, this is a significant obstacle.

"I want to get organic certification, but the process is complicated and expensive. For SMEs like mine, this is very difficult," said an SMEs informant in the food sector.

Impact of Green Business Implementation

Despite facing various challenges, most informants reported significant positive impacts from implementing green business practices. These impacts were felt not only economically, but also environmentally and socially.

1. Economic Impact

The implementation of green business has proven to provide economic benefits for SMEs players.

a. Increased Sales (8 informants)

Several informants reported an increase in sales after rebranding as environmentally friendly businesses. This strategy attracted a new segment of consumers who are concerned about sustainability issues.

"Since I branded myself as an eco-friendly business, sales have increased by 30%. Many new customers are concerned about the environment." – Informant from a printing and design SMEs.

b. Operational Cost Efficiency (6 informants)

Energy savings, more efficient water management, and the use of waste as an additional source of income are tangible benefits of environmentally friendly practices.

"Saving electricity and water has reduced operational costs. Waste that can be sold is also an additional source of income." – Informant from a craft SMEs.

c. Access to Premium Markets (5 informants)

Products with high sustainability value are more easily accepted in premium markets, with greater profit margins.

"My products are now sold in premium stores that are looking for sustainable products. The profit margin is greater." – Fashion SMEs informant.

2. Environmental Impact

Environmental impact is one of the most tangible results of implementing green business practices.

a. Waste Reduction (11 informants)

Most informants reported a significant reduction in production waste through recycling and reuse of materials.

"We used to produce five bags of waste per day, but now it's down to one bag because everything is recycled or reused." – Informant from a fashion SMEs.

b. Carbon Footprint Reduction (4 informants)

Efforts to use renewable energy and local raw materials have contributed to reducing carbon emissions from production activities.

"By using solar panels and local materials, I am confident that my business's carbon footprint has been significantly reduced." – Cafe SMEs informant.

3. Social Impact

In addition to economic and environmental impacts, green business practices also have a positive social impact on the community and business actors themselves.

a. Increased Consumer Awareness (9 informants)

Through interaction with environmentally friendly products, consumers become more aware of the importance of a sustainable lifestyle.

"My customers have become more aware of the environment. Many share their experiences in reducing waste." – Informant from a fashion SMEs.

b. Empowerment of Local Communities (5 informants)

Several SMEs actors integrate sustainability principles by empowering local artisans and farmers as part of their supply chain.

"I source products from local artisans so that I can help their economy too. It's a win-win solution." – Food SMEs informant.

c. Satisfaction and Pride (12 informants)

All informants expressed personal satisfaction and pride in running a business that contributes to environmental sustainability.

"Money isn't everything. I'm happy to be able to do business while protecting the earth for future generations." – Food and beverage SMEs informant.

DISCUSSION

Environmental Awareness as the Foundation of Green Business

Increasing global attention to environmental issues has prompted many companies to adopt a more sustainable and environmentally responsible approach to business. This trend reflects a paradigm shift in which sustainability is no longer seen merely as a social obligation, but also as a business strategy that can enhance a company's competitiveness and reputation. Environmental awareness is now an important factor in the corporate decision-making process, including investment, resource use, and fund allocation. Companies are increasingly considering the ecological impact of their business activities to create energy efficiency, reduce carbon emissions, and encourage green innovations oriented towards long-term sustainability. Sustainable business practices not only support environmental preservation but also provide the foundation for more inclusive and resilient economic growth (Lakasse et al., 2024).

In the context of small and medium-sized enterprises (SMEs), increasing awareness of environmental issues has created a strong impetus to adopt greener business practices. However, while many SMEs exhibit positive attitudes and a growing knowledge of the importance of sustainability, the level of actual implementation of green practices remains low. This gap is generally due to a lack of in-depth understanding of the economic benefits that can be gained, such as cost efficiency, energy savings, and improved business image through the adoption of green business strategies. Many SME owners do not fully realize that a green approach not only contributes to the preservation of nature but can also be a source of competitive advantage and long-term financial sustainability for their business (Gadenne et al., 2009).

According to Aggarwal (2023), the concept of green education plays a strategic role in shaping individuals' mindsets and behaviors towards sustainability. Through this education, employees gain deeper knowledge and awareness of environmental issues, including the ecological impacts of human activities and the importance of maintaining the balance of nature. This understanding not only increases environmental stewardship in the workplace but also encourages behavioral changes towards a more responsible direction, such as energy efficiency,

waste management, and wise use of resources. Furthermore, green education contributes to building a green-oriented organizational culture, where individuals actively support community initiatives and participate in collective efforts to promote public policies that support sustainable development.

[Susanto and Meiryani \(2019\)](#) research shows that increased environmental awareness plays an important role in driving the adoption of effective environmental management practices, which in turn has a positive impact on environmental performance and corporate sustainability. In the Indonesian context, environmental awareness is one of the key factors influencing SMEs' decision to transition to green business practices. In addition, the successful transition to green practices is greatly influenced by strategic partnerships, government policy support, and collaboration with various parties in the business ecosystem. Such support not only helps SMEs access resources and technical knowledge but also strengthens their motivation to overcome barriers such as limited capital and infrastructure ([Hamdani et al., 2024](#)).

The adoption of green market orientation among Indonesian SMEs has been shown to positively impact business performance by emphasizing the importance of balancing economic, environmental, and social dimensions in business practices. This suggests that in the context of increasing global environmental awareness, implementing green market orientation and sustainable innovation is a key strategy for SMEs to maintain competitiveness while supporting sustainable development goals ([Tjahjadi et al., 2020](#)). For example, local businesses in the food processing sector demonstrate that the success of sustainable innovation within an organization is strongly influenced by the innovative ability of employees and an organizational culture that encourages creativity. This factor is reinforced by the role of visionary and sustainability-oriented leadership, which creates a work environment conducive to new ideas and the development of environmentally friendly solutions. High environmental awareness, leadership support, and innovative culture are important elements in strengthening the capacity of SMEs towards competitive green business transformation ([Najib et al., 2021](#)).

Informants with an in-depth understanding of green business concepts can generally implement these practices more comprehensively and integratively across various operational aspects, from production to marketing. The findings of this study indicate that the level of environmental awareness among SMEs actors is not solely formed through formal education. Instead, it is more influenced by personal experience, social interaction, and exposure to sustainability information and trends through digital media and local communities. These findings indicate that the formation of environmentally friendly behavior depends not only on academic knowledge but also on contextual experiences and social values that develop around business actors. Therefore, environmental awareness initiatives for SMEs need to be designed with approaches that are accessible, contextual, and relevant to their daily realities. These approaches could include community-based training programs, educational content on social media, or collaboration with local institutions to strengthen understanding and sustainable business practices.

Systemic Challenges that Require Structural Interventions

The barriers identified in this study—namely limited capital, difficulty in accessing environmentally friendly raw materials, and lack of government support—show that the challenges in implementing green business by SMEs are not just individual issues, but are systemic problems rooted in economic structures and policies that do not fully support sustainability. This systemic character explains why most SMEs players struggle to transform their businesses despite having the awareness and willingness to shift to environmentally friendly practices. Therefore, an ecosystem-based approach is needed that involves collaboration between government, financial institutions, academics, non-governmental organizations, and large industry players. This approach enables a conducive environment for SMEs to innovate, gain access to resources, and receive continuous technical and financial assistance. With cross-party support, SMEs can have more space to develop sustainability strategies without being burdened by the structural limitations they face.

Limited capital, experienced by 10 out of 12 informants, emerged as the most dominant and complex barrier. This finding reinforces the results of [Williams and Schaefer \(2013\)](#) study,

which confirmed that financial constraints are the main inhibiting factor in implementing green business in the SMEs sector. However, this study adds a new, more in-depth dimension: Financial barriers are not only related to the amount of initial investment required to replace equipment or raw materials, but also include perceptions of risk and uncertainty regarding the return on investment. Many SMEs players still view investment in green technology as a short-term burden, rather than a long-term opportunity, due to a lack of information on the potential cost efficiencies and brand image improvements that can result. On the other hand, access to green funding sources-such as green credit, impact-based financing schemes, or CSR programs of large companies still very limited. Banks and financial institutions also often perceive SMEs green projects as high-risk, requiring large collateral or high interest rates that are unaffordable for most small businesses.

Meanwhile, the lack of government support complained about by eight informants highlights the gap between policy design and its realization on the ground. Normatively, the Indonesian government has various initiatives to encourage sustainable business practices, such as green financing, tax incentives for green businesses, eco-innovation training programs, and national campaigns on the green economy. However, in practice, these policies have not fully reached the SMEs sector equally. Businesses in rural areas and those with limited infrastructure are often unaware of these programs or have difficulty meeting the complicated administrative requirements. In addition, weak inter-agency coordination and a lack of technical assistance at the local level have made the policy ineffective. These conditions create an access gap, where only a small proportion of SMEs with high capacity can take advantage of government support. Therefore, more participatory and local needs-based policy reformulation is needed, for example, through the establishment of green business centers in the regions, simplifying access to financing, and involving local business communities in the policy planning process, so that efforts to encourage SMEs towards green business practices can be realized more inclusively and sustainably.

Creativity and Innovation under Limitations

One of the most interesting findings in this study is the ability of SMEs actors to keep innovating amidst their limited resources. Despite facing various structural barriers such as limited capital, limited access to environmentally friendly technology, and a lack of government support, SMEs players show remarkable resilience in developing creative solutions. Many of them adopt low-cost innovation approaches, such as utilizing local raw materials that are easy to obtain, recycling production waste into new products (upcycling), and using community-based marketing strategies and social media to reach consumers. This condition shows that innovation in the SMEs sector does not always depend on the availability of large capital, but rather on the ability to think adaptively, take advantage of opportunities, and optimize existing resources in the surrounding environment.

The practice of upcycling, for example, is one of the most prominent forms of innovation among SMEs. Some informants in this study transformed fabric waste, glass bottles, or leftover production materials into new products of economic value, such as bags, accessories, or home decorations. This approach not only reduces waste and environmental impact but also provides added value that expands their product portfolio. In the context of a circular economy, such practices reflect the application of the “waste to wealth” principle, where waste is seen not as a problem, but rather as a new resource that can be reprocessed. In addition to product innovation, many SMEs also show creativity in marketing strategies. With limited promotional funds, they utilize social media platforms such as Instagram, TikTok, and WhatsApp Business to build a green brand image organically. Through educational content, storytelling about eco-friendly production processes, and direct interaction with customers, they succeed in creating emotional engagement that strengthens consumer loyalty. This strategy proved effective because it aligned with current consumer behavior trends that prioritize authenticity, transparency, and social value in purchasing decisions. This digital creativity also shows that the transformation towards green business depends not only on material changes but also on changes in communication and market relationships.

This finding supports [Hillary \(2004\)](#) view that the unique characteristics of SMEs-such as simple organizational structure, quick decision-making, and high flexibility, are important assets in the implementation of green business practices. The non-bureaucratic managerial structure allows

SMEs to adapt quickly to environmental changes and market demands. When opportunities to implement green practices arise, they can immediately adjust their strategies without going through the lengthy administrative processes that occur in large companies. This flexibility makes SMEs potential actors in supporting the transition to a green economy at the local level, especially if their innovations receive appropriate technical and policy support.

Creativity and innovation are often born not from a planned strategy, but from a “forced” situation due to limited capital and market pressure. This means that innovation among SMEs is still reactive, not proactive. Businesses innovate because they need to survive, not because they have a long-term vision for environmental sustainability. This condition highlights the need for policy intervention and strategic assistance to channel the emerging creativity into a systematic business plan. With a more structured approach through green innovation training, applied research incentives, and partnerships with educational institutions or large the innovation potential of SMEs can be transformed from a mere response to limitations to the main driving force for sustainable green economic growth.

Triple Bottom Line Impact

In the realm of green business, empirical research shows that sustainability initiatives can have a positive effect on all three pillars of the triple bottom line-profit (economic), people (social), and planet (environmental). Based on reports from eight informants, there was an increase in sales volume following the adoption of green practices, indicating that the economic aspect does not always lag if green strategies are packaged appropriately. On the environmental side, eleven informants stated that waste reduction efforts (e.g., recycling, reducing the use of single-use materials, or production process efficiency) have yielded tangible results. Meanwhile, on the social side, nine informants claimed that their programs or efforts led to increased environmental awareness among consumers and the surrounding community.

Interestingly, the effects on the social and environmental dimensions appear to emerge faster and are easier to measure compared to the economic effects. Several informants mentioned that they felt an inner (intrinsic) satisfaction knowing that their business was providing tangible benefits to the environment and society. However, there was no significant spike in profits in the early stages. This suggests that a non-financial motivational aspect strengthens the sustainability of business actors' commitment: the feeling that their business is “worthwhile” becomes an internal reward that maintains the spirit of innovation and consistency. In some cases, positive community responses to green efforts (such as appreciation, loyalty, and social support) also accelerate the emergence of social value and a better brand image, which in turn paves the way for medium to long-term economic growth.

Extending this perspective to the theoretical framework of sustainability and organizational strategy, these observations align with the literature suggesting that integrating social and environmental values can strengthen corporate legitimacy and create a sustainable competitive advantage. For example, institutional pressures (coercive, normative, mimetic) can motivate firms to adopt sustainability strategies that significantly impact environmental and social dimensions, even though the economic effects take longer to be felt consistently ([Pasamar et al., 2023](#)).

The Role of Social Media and Community

Social media now plays a central role in strengthening SMEs' sustainability strategies, especially in the context of green business. Platforms such as Instagram, Facebook, and TikTok are becoming highly effective tools to communicate environmental values and social responsibility to consumers. Through engaging visual content, such as educational videos, behind-the-scenes of environmentally friendly production processes, and interactive campaigns, SMEs can instill a positive image as a business that cares about sustainability. Study of [Amoako et al., \(2023\)](#) shows that strategic use of social media can increase consumer awareness of green products and encourage more ethical purchasing behavior. This shows that social media is not only a promotional tool but also an educational medium that expands people's understanding of the importance of sustainability in daily consumption.

Social media also serves as a platform for the formation of a community of practice among

SMEs that share a similar vision and mission in green business practices. This online community allows businesses to share experiences, develop collaborative ideas, and build support networks that strengthen their position in the sustainable market. Through discussion forums, webinars, or cross-brand collaborations, SMEs can deepen their knowledge on green marketing strategies, energy efficiency, and product innovation based on recycled or local eco-friendly materials (Chuang & Liao, 2021). Such communities also help SMEs increase their credibility in the eyes of the public, as knowledge-sharing practices demonstrate a real commitment to the principles of collaboration and sustainability.

Social media is an ideal platform to build authentic green storytelling - sustainability narratives that are delivered honestly, transparently, and consistently. Research shows that modern consumers are increasingly skeptical of inauthentic commercial messages, so only brands with real and proven sustainability communications can gain public trust (Kumar et al., 2025). By utilizing content such as origin stories of raw materials, social impacts of local production, or stories of business journeys towards sustainability, SMEs can strengthen emotional connections with their audiences. This strategy not only increases consumer loyalty but also helps establish a sustainable brand identity with integrity.

Ultimately, the utilization of social media provides a great opportunity for SMEs to expand their market reach directly without relying on traditional intermediaries. In the digital era, low-cost, high-impact strategies through social media allow SMEs to penetrate a wider market while strengthening an inclusive green business ecosystem. With effective communication, community collaboration, and authentic storytelling, social media has become an important tool for transforming collective awareness on sustainability and supporting the creation of a resilient green economy. The combination of digital strategy and sustainability values makes SMEs not only economically competitive but also significantly contribute to social and environmental sustainability at the local and global levels.

CONCLUSION

This study explores in depth the implementation of green business practices in small and medium enterprises (SMEs) in Indonesia using a qualitative approach through interviews with 12 SMES actors from various industrial sectors. The results of the study show significant variations in the level of understanding and application of sustainability principles, ranging from simple actions like using environmentally friendly materials to implementing integrated green strategies throughout the value chain. The main motivation behind implementing green practices is rooted not only in environmental awareness and the personal values of business actors but also in the need to improve operational efficiency, meet increasingly environmentally conscious market demand, and build a competitive advantage through brand differentiation. Concrete practices identified include using local and organic raw materials, replacing plastic packaging with biodegradable materials, applying energy efficiency principles, implementing circularity-based waste management, and promoting these practices through green marketing strategies.

However, the implementation still faces several obstacles, including limited capital and technology, difficulties in obtaining environmentally friendly raw materials, low green literacy among actors and consumers, minimal government incentives, and complex, expensive certification processes. Nevertheless, various positive impacts have been identified, including increased sales, improved production cost efficiency, expanded access to premium markets, reduced waste and carbon emissions, and increased public ecological awareness and local community empowerment. Overall, the results of this study emphasize the importance of cross-sector collaboration involving the government, financial institutions, academics, and industry players to create a supportive ecosystem that enables SMEs to transform towards an inclusive, adaptive, and sustainable green business model in the long term.

The limitations of this study lie in the limited number of informants and the use of qualitative methods that rely on subjective perceptions of SMEs, so the findings cannot be broadly generalized. This study also did not measure financial or environmental impacts quantitatively and focused only on SMEs that have already begun implementing green practices. Future research directions could include expanding the number and variety of respondents, using a mixed methods

approach to measure impact more objectively, and analyzing MSMEs that have not yet adopted green practices. Future research should also explore the roles of government, financial institutions, and business associations in building a supportive ecosystem for green business transformation.

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