

Green Marketing Strategies and Operational Cost Reductions of Microenterprises in Emerging Markets

ALON, ALEXANDREA C.¹, QUITO, CLAUDINE.², EVANGELISTA, LANCE AUDREY M.³,
SOLLEZA, ASHLY MARIE B. ⁴, MAGTIBAY, ALELI I.⁵

^{1, 2, 3, 4, 5} School of Business Administration, Paete Science and Business College, Inc.
Paete, Laguna, Philippines

Abstract- This study examined green marketing strategies and operational cost reductions among microenterprises in Sta. Cruz, Pagsanjan, Lumban, Paete, and Siniloan, Laguna, highlight the challenge of balancing sustainability with financial viability. It aimed to determine the respondents' profiles—age, sex, educational attainment, and years of business operation—and assess sustainable product design, environmental initiatives, and policy compliance as components of green marketing, as well as their connection to cost reduction. A descriptive-correlational mixed-methods design was employed. Quantitative data were collected from 120 employees via surveys, while interviews with five microenterprise owners provided qualitative insights into actual practices and challenges. Weighted mean and correlation tests analyzed the quantitative data, complemented by thematic analysis of the interviews. Results showed that green marketing strategies and cost reduction practices were generally high, particularly in influencing customer attitudes, enhancing credibility through compliance, and sourcing materials locally. However, monitoring, waste management, and fair labor compliance were less emphasized. Educational attainment had a significant relationship with both sustainability practices and cost reduction, while sex, age, and years of operation had no effect. Environmental initiatives and policy compliance contributed to cost savings, while sustainable product design offered long-term benefits. The study recommended strengthening training and monitoring tools, gradually adopting eco-friendly designs, and enhancing government support to promote sustainable microenterprise practices. Microenterprises are the backbone of the fast-paced business world, driving economic growth, environmental innovation, and job creation. Despite

their importance, they face significant challenges, including limited resources, intense competition, and rising costs. For long-term survival, cost management is crucial for financial success. Green marketing strategies, including the use of eco-friendly materials, sustainable practices, responsible waste disposal, and effective marketing, can help reduce business costs. Moreover, combining these strategies with green practices and accountable waste management gradually lowers costs, enabling microenterprises to thrive in the market. For instance, using recycled or environmentally friendly packaging materials can reduce expenses. Although marketing can be costly, green marketing helps microenterprises stand out and attract environmentally conscious consumers.

Index Terms- - Green Marketing Strategies, Operational Cost Reduction, Microenterprises.

I. INTRODUCTION

Microenterprises are the backbone of the fast-paced business world, driving economic growth, environmental innovation, and job creation. Despite their importance, they face significant challenges, including limited resources, intense competition, and rising costs. For them to survive in the long run, cost management is crucial for financial success. Green marketing strategies, including the use of eco-friendly materials, implementation of sustainable practices,

Responsible waste disposal and effective marketing can help reduce business costs. Moreover, by combining these strategies with green practices and accountable waste management, costs are gradually lowered, enabling microenterprises to develop and thrive in the market. For instance, by using recycled

or other environmentally friendly packaging materials for products, one can reduce expenses. Marketing is costly, but green marketing can help microenterprises stand out in a crowded market and attract environmentally conscious consumers.

The emergence of green marketing strategies is becoming a fundamental component of business strategies. They offer low-cost methods for reaching environmentally conscious consumers and reducing the business costs of microenterprises. Green marketing plays a crucial role in implementing environmental strategies through various tools and platforms that promote ecologically sound practices, including cost-saving measures, waste management, digital advertising, e-commerce, virtual events, webinars, and other initiatives.

This study aimed to investigate the green marketing practices of selected Micro and Small Enterprises (MSMEs) in various areas of Laguna Province, Philippines. The purpose of studying green marketing strategies was to provide guidance and help microenterprises succeed and thrive in the business market. Through the understanding and leveraging of these strategies, microenterprises will be able to overcome entry barriers, attract environmentally conscious customers, and achieve cost efficiencies, thereby positioning themselves for success in today's dynamic and competitive business environment.

II. METHODS

This study examined the relationship between green marketing practices and operational cost reduction among microenterprises in the municipalities of Paete, Lumban, Pagsanjan, Sta. Cruz, and Pila, Laguna. A mixed-methods research design was employed to integrate both quantitative and qualitative approaches, allowing for a holistic understanding of the topic. This approach enabled the researchers to capture measurable outcomes through numerical data while also obtaining rich, contextual insights from participants' experiences, challenges, and strategies in implementing sustainable practices.

A total of 120 respondents, including microenterprise owners, managers, and employees, were purposively selected to ensure a diverse and representative

sample. The quantitative component involved administering structured survey questionnaires that measured respondents' demographic profiles, such as age, sex, educational attainment, and years of business operation. The surveys also evaluated the extent of green marketing strategies implemented, including sustainable product design, environmentally responsible sourcing, energy-efficient operations, digital marketing campaigns, eco-friendly packaging, policy compliance, and waste management practices. Participants rated the effectiveness of these strategies in reducing operational costs using a four-point Likert scale, which allowed the researchers to quantify perceptions and identify patterns across different enterprises.

To supplement the quantitative data, in-depth interviews were conducted with selected microenterprise owners and key personnel. These interviews explored personal experiences, decision-making processes, challenges encountered in adopting green practices, and observations on customer responses to sustainability efforts. This qualitative component provided a deeper understanding of how green marketing strategies are implemented in practice and how they contribute to operational efficiency and cost savings.

Data analysis involved calculating weighted means to summarize survey responses, using Spearman's correlation to determine relationships between green marketing strategies and cost reduction practices, and applying descriptive statistics—such as frequency, percentage, and ranking—to describe demographic characteristics. The integration of qualitative and quantitative data provided a comprehensive perspective, demonstrating how environmentally responsible practices not only enhance operational efficiency and reduce costs but also influence customer engagement, market competitiveness, and the long-term sustainability of microenterprises.

III. RESULTS AND DISCUSSION

3.1 Profile of the Respondents

The demographic profile of the respondents showed that males slightly outnumbered females. In terms of age, most respondents were 26-30 years old, followed by 31-35 years old, and 21-25 years old. Both junior

high school graduates and college graduates were tied as the highest educational attainment groups. Nearly half of the respondents had a monthly income of less than ₱9,100, while very few belonged to the ₱36,401 to ₱63,700 bracket. Most of the respondents' businesses had been operating for more than five years. The results showed that microenterprise ownership was slightly male-dominated, although females also had significant participation, indicating a gender balance. Most respondents were aged 26–30, followed by those in their early to mid-thirties, suggesting that young and productive individuals largely sustained microenterprises with energy and adaptability. Educational attainment was inclusive, as both Junior High School and College graduates were equally represented. Income distribution revealed that many entrepreneurs remained in low-income brackets, highlighting financial challenges despite business involvement. Lastly, most enterprises had been operating for over five years, reflecting resilience and sustainability, while newer ventures signified ongoing entrepreneurial entry.

Table 1. Extent of Green Marketing Strategies

Aspect	Mean	SD
Sustainable Product Design	3.16	0.23
Environmental Initiatives	3.01	0.20
Policy Compliance	3.14	0.12

Table 1 presents the extent of green marketing practices among the surveyed microenterprises. Sustainable Product Design registered a mean score of 3.16 with a standard deviation (SD) of 0.23, indicating uniform responses among participants regarding sustainability features integrated into their products. Environmental Initiatives obtained a mean of 3.01, also with an SD of 0.20, suggesting consistent perceptions of the environmental programs practiced within the enterprises. Policy Compliance showed a mean of 3.14 and likewise an SD of 0.12, reflecting unanimous agreement on the level of adherence to environmental policies and regulations. The SD values across all variables imply that respondents provided identical ratings for each aspect, demonstrating uniformity in their assessment of green marketing practices.

The results of the Extent of Green Marketing Strategies in terms of Sustainable Product Design can be seen in Table 2.

Table 2. Sustainable Product Design

Statement	Weighted Mean	Interpretation
We...		
1. Influence consumer attitudes toward eco-friendly products.	3.52	Strongly Agree
2. Incorporate eco-friendly materials and production processes to enhance brand credibility and purchase intent within green markets	3.23	Agree
3. Evaluate the effectiveness of incorporating eco-friendly materials and processes in enhancing brand reputation and product appeal	3.05	Agree
4. Measure the operational benefits and cost savings associated with implementing sustainable design principles in microenterprise practices.	2.97	Agree
5. Examine the relationship between innovative and sustainable product design and the overall financial performance of businesses in emerging markets.	3.15	Agree
Total:	3.15	To a Moderate Extent

Table 2 presents the extent of green marketing strategies in terms of sustainable product design. The highest mean (3.52) indicates that influencing

consumer attitudes toward eco-friendly products is strongly emphasized by the respondents. This suggests that sustainable design efforts are most effective when they shape positive perceptions toward environmentally friendly goods. The second-highest mean (3.23) shows that incorporating eco-friendly materials and production processes significantly enhances brand credibility and purchase intent among consumers. Meanwhile, evaluating the effectiveness of integrating eco-friendly materials in boosting brand reputation and product appeal also received a high level of agreement (3.05), reflecting its importance in green marketing. Other factors, such as measuring operational benefits and cost savings from sustainable design (2.97), are also viewed as relevant, though slightly less emphasized. The lowest mean (3.02) suggests that examining the link between innovative sustainable design and financial performance is important, but not as strongly prioritized compared to other sustainability aspects. Overall, the total mean of 3.15 indicates that the extent of sustainable product design among microenterprises is practiced to a great extent, showing that green design principles are generally valued in business operations.

The results of the Extent of Green Marketing Strategies in terms of Environmental Initiatives can be seen in Table 3.

Statement	Weighted Mean	Interpretation
We...		
1. Evaluate the impact of our environmental initiatives on consumer perceptions and behavior in green markets	3.26	Strongly Agree
2. Assess the effectiveness of integrating sustainable practices, such as energy conservation and waste management, into our brand strategy.	3.10	Agree
3. Determine how our environmental efforts improve operational efficiency, reduce costs, and optimize resources	2.90	Agree

4. Identify key performance indicators that accurately measure the success of our environmental efforts and their contribution to overall sustainability. 2.74 Agree
5. Analyze the role of environmental initiatives in building consumer trust and fostering long-term loyalty within our market. 3.03 Agree

Total:	3.00	To a Moderate Extent
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The Table 3 mean (3.26) indicates that evaluating the impact of Environmental initiatives on consumer perceptions and behaviors is strongly emphasized by respondents. The second-highest mean (3.10) shows that integrating sustainable practices—such as energy conservation and waste management—into brand strategy is viewed as an essential part of environmental responsibility. Meanwhile, determining how environmental efforts improve operational efficiency and reduce costs (2.90). On the other hand, identifying clear performance indicators to measure environmental initiatives (2.74) received the lowest mean, suggesting that while it is important, it is slightly less prioritized. Lastly, analyzing how environmental initiatives help build consumer trust and long-term loyalty (3.03) also received a high level of agreement, emphasizing the role of sustainability in strengthening customer relationships. Overall, the total mean of 3.00 indicates that environmental initiatives are practiced to a moderate extent, reflecting that businesses value eco-friendliness.

The results of the Extent of using Green Marketing Strategies in terms of Policy Compliance can be seen in Table 4.

Table 4. Policy Compliance

Statement	Weighted Mean	Interpretation
We...		
1. Assess the impact of adhering strictly to our brand's green marketing	3.30	Strongly Agree

policies on its credibility and consumer trust		
2. Identify and address gaps between our internal practices and industry compliance requirements to enhance our green marketing efforts..	3.03	Agree
3. Measure the cost-effectiveness of implementing policies that support our green marketing strategies.	3.04	Agree
4. Evaluate the impact of policy compliance on driving innovation within our green marketing initiatives	3.10	Agree
5 Integrate new environmental regulations into our strategic planning to continuously improve our green marketing performance.	3.21	Agree
Total:	3.13	To a Moderate Extent

The findings indicate that the organization complies with green marketing policies to a moderate extent, as shown by the overall weighted mean of 3.13. Respondents strongly agree (3.30) that adhering to green marketing policies enhances the company’s credibility and consumer trust. They also agree that the organization identifies and addresses gaps between Internal practices and industry requirements (3.03), measures the cost-effectiveness of policies supporting green marketing strategies (3.04), and evaluates how policy compliance encourages innovation (3.10). In addition, they agree that new environmental regulations are integrated into strategic planning to improve green marketing performance (3.21). These results suggest that while the company demonstrates consistent adherence to green marketing policies, continuous improvement is

still encouraged. Internal practices and industry requirements (3.03), measure the cost-effectiveness of policies supporting green marketing strategies (3.04), and evaluate how policy compliance encourages innovation (3.10). In addition, they agree that new environmental regulations are integrated into strategic planning to improve green marketing performance (3.21). These results suggest that while the company demonstrates consistent adherence to green marketing policies, continuous improvement is still encouraged.

Concerning the extent of using green marketing strategies, the following statements were gathered regarding how these environmentally responsible practices contribute to operational cost reductions, financial sustainability, and the overall competitiveness of Microenterprises (ME).

ME1: Builds customer trust by offering low-cost alternatives while ensuring quality, durability, and the use of sustainable materials.

ME2: Achieves efficiency by reusing excess resources, utilizing solar energy, and repurposing wood scraps into new products.

ME3: Complies with environmental laws through proper waste disposal, recycling, and risk management practices.

ME4: Focuses on innovation and customer satisfaction by providing the right products and customized designs that also help lower production costs.

ME5: Addresses rising wood costs and pricing challenges through innovation, recycling, and open communication with customers.

The business owners revealed that, although microenterprises applied green marketing strategies differently, their practices converged on two key points: reducing operational costs and maintaining customer trust. Microenterprises 1, 2, and 4 aligned in using eco-friendly materials and creative designs as tools for affordability, efficiency, and loyalty-building, while Microenterprises 2, 3, and 5 converged on recycling, compliance, and innovation

as strategies to overcome challenges in resources and costs. The results showed that microenterprises approached sustainability in varied ways, focusing on efficiency, compliance, innovation, or customer trust. While eco-friendly branding and strict policy adherence boosted consumer trust, gaps remained in measuring efficiency and sustainability due to limited resources. This showed that capacity-building and monitoring tools we needed to fully maximize both operational and reputational benefits. According to Fatmawati and Alikhwan (2021), green marketing enhances brand image and strengthens consumer trust by aligning business practices with sustainability values.

However, the study also indicated that without structured monitoring systems, the financial gains from green initiatives may not be consistently realized.

The level of operational cost reduction among microenterprises indicates that respondents generally agree that adopting green practices helps them lower expenses. They strongly agree that adopting sustainable product design and sourcing local materials improves cost efficiency. Respondents also agree that utilizing energy-efficient technologies, collaborating with the government to secure incentives, and effectively managing waste contribute to reducing operational costs. They likewise believe that choosing suppliers with sustainable practices, complying with regulations, and promoting recycling support cost-saving efforts. Overall, the results indicate that green initiatives and sustainable practices meaningfully help microenterprises reduce their operational expenses.

The results of the Level Operational Cost Reduction of Microenterprises in Emerging Markets can be seen in Table5

Statement	Weighted Mean	Interpretation
1. Encourage microenterprises to adopt sustainable product design practices to achieve cost efficiency.	3.53	Strongly Agree
2. Support microenterprises in sourcing sustainable materials locally to minimize expenses.	3.25	Strongly Agree
3. Develop guidance to help microenterprises implement energy-efficient technologies in their operations.	3.10	Strongly Agree
4. Collaborate with governments and institutions to provide incentives for cost reduction through sustainable practices.	3.02	Agree
5. Implement to encourage microenterprises to manage waste more efficiently and economically.	2.84	Agree
6. Establish to help microenterprises recycle or repurpose materials effectively.	2.88	Agree
7. Evaluate and choose suppliers that align with cost-efficient and sustainable green practices	2.98	Agree
8. Assist microenterprises in navigating local regulations to reduce compliance costs effectively.	3.13	Agree
9. Create to help microenterprises comply with international trade regulations cost-effectively.	3.08	Agree
10. Collaborate with the government to develop and implement fair labor compliance policies that support and protect workers while remaining cost-effective for microenterprises	2.88	Agree
TOTAL	3.07	To Moderate Level

The level of operational cost reduction among microenterprises indicates that respondents generally agree that adopting green practices helps them lower expenses. They strongly agree that adopting sustainable product design and sourcing local materials improves cost efficiency. Respondents also agree that utilizing energy-efficient technologies, collaborating with the government to secure incentives, and effectively managing waste contribute to reducing operational costs. They likewise believe that choosing suppliers with sustainable practices, complying with regulations, and promoting recycling support cost-saving efforts. Overall, the results indicate that green initiatives and sustainable practices meaningfully help microenterprises reduce their operational expenses.

Concerning the Level of business performance, the following statements were acquired during the Face-to-Face Interview:

ME1: Reduces expenses by conserving electricity and water, reusing wood, and minimizing plastic through eco-friendly packaging.

ME2: Lowers costs by reusing leftover wood, converting unsold items, and sourcing recycled materials.

ME3: Minimizes waste and expenses by selling used materials, reusing wood, and saving electricity through the use of solar power.

ME4: Complies with government policies and taxes while finding ways to reduce costs internally.

ME5: Manages high operational costs by saving income, preparing emergency funds, and partnering with suppliers to reuse leftover materials.

The responses showed that Microenterprises 1, 2, and 3 reduced costs through resource efficiency, such as recycling, conversion, and the use of renewable energy, while Microenterprises 4 and 5 focused on stability through compliance, financial preparedness, and supplier collaboration. Despite differences in approach, all microenterprises shared the goal of lowering expenses and sustaining operations.

The findings showed that operational cost reduction among microenterprises was achieved through two main approaches: resource efficiency and financial discipline. ME1, ME2, and ME3 converged on sustainability-driven cost reduction through recycling, reuse, and energy conservation, while ME4 and ME5 aligned on long-term stability through compliance, financial management, and partnerships. Despite different strategies, all respondents demonstrate a shared commitment to lowering operational costs and sustaining business continuity. This result was supported by Becerra-Bizarrón and Gomez-Bernal Jr. (2025). Micro and small enterprises (MSEs) are essential for economic and social development globally, as they represent a significant proportion of employment and production. Nonetheless, these enterprises confront substantial difficulties in incorporating sustainable practices, largely attributable to their limited financial resources and capacity, difficulties in accessing relevant information, scarcity of operational resources, and the lack of regulatory frameworks to facilitate their operations.

Table 6. Relationship between the Profile of the Respondents and the Green Marketing Strategies.

Variable	p-value	Relationship
Sex	0.909	Not Significant
Age	0.644	Not Significant
Educational Attainment	0.024	Significant
Monthly Income	0.426	Not Significant
Years of Business Operation	0.133	Not Significant

The results showed that microenterprises reduced costs mainly through sustainable product design, local sourcing, and resource efficiency, such as recycling and energy conservation. Others focused on financial discipline through compliance, financial management, and partnerships. While these approaches differed, all aimed at lowering expenses and sustaining operations, though waste management and fair labor compliance remained less integrated without stronger institutional support.

The results demonstrated the relationship between the demographic profile of respondents and their assessment of green marketing strategies. Among the variables examined, only educational attainment showed a significant relationship with green marketing strategies, while sex, age, monthly income, and years of business operation were not statistically significant. These findings implied that the respondents' educational attainment influenced how they perceived and applied green marketing strategies, supporting the notion that higher levels of education enhanced awareness and adoption of sustainable business practices. In contrast, other demographic factors such as sex, age, income, and business experience did not exhibit significant effects on the adoption of green marketing, suggesting that such strategies were generally acknowledged across diverse groups.

Table 7. The Relationship between the Extent of Using Green Marketing Strategies and the Level of Operational Cost Reduction of Microenterprises in Emerging Markets

Variable	p-value	Relationship
Sustainable Product Design	0.173	Not Significant
Environmental Initiatives	0.003	Significant
Policy Compliance	0.002	Significant

The relationship between green marketing strategies and operational cost reduction was presented. The results showed that environmental initiatives, policies, and compliance were significantly related to operational cost reduction. On the other hand, sustainable product design exhibited no significant relationship. The findings indicated that environmental initiatives and policy compliance directly influenced cost reduction in microenterprises, suggesting that adherence to sustainability regulations and eco-friendly practices yielded financial benefits. These practices enabled microenterprises to strengthen both credibility and operational efficiency. However, sustainable product design did not significantly correlate with cost reduction, which was due to the higher upfront costs of adopting eco-friendly designs. These expenses tend to outweigh immediate savings, even though they may provide advantages in the long run. This

was consistent with Altaf and Shahzad (2021), who emphasized that environmental management systems and innovations in both products and processes enhanced resource efficiency, reduced emissions, and promoted sustainable production.

IV. CONCLUSION

Based on a thorough assessment and interpretation of the results, the study arrived at the following conclusions:

1. The results indicated that most of the respondents below ₱9,100 and businesses operating for more than five years. The profile of the respondents revealed no significant relationship between sex, age, income, or years of business operation and green marketing strategies. However, educational attainment demonstrated a significant effect, suggesting that higher levels of education enabled entrepreneurs to become more aware of and capable of applying sustainable practices, whereas other demographic factors had no influence.

2. The profile of the respondents likewise showed no significant relationship with cost-reduction practices in terms of sex, age, income, and years of operation. Educational attainment, however, was found to be highly significant, indicating that entrepreneurs with higher levels of education were more likely to implement effective cost-saving strategies. This finding underscored the role of education in equipping business owners with the knowledge and skills necessary to adopt efficient and sustainable practices. At the same time, cost-reduction measures remained consistent across other demographic groups.

3. The findings further revealed that the extent of green marketing strategies had no significant relationship with sustainable product design in terms of cost reduction. Nevertheless, environmental initiatives and policy compliance exhibited a significant relationship, suggesting that businesses gained financial benefits when adhering to eco-friendly regulations and sustainability policies. Conversely, sustainable product design did not yield immediate cost savings due to higher initial

investments, although it may provide long-term advantages.

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