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The Influence of Green Industry and Environmental Corporate Social Responsibility on Business Sustainability in Improving Company Business Performance

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Abstract

The research is an Empirical Study on Food Manufacturing, investigates the influence of green industry and environmental on business sustainability and company performance. Using the RBV as framework, this study examines how green industry and environmental CSR can enhance company performance and sustainability by reducing environmental impact and fostering stakeholder value. The study focuses on medium to large food manufacturing companies in Central Java, with key variables including business sustainability, green industry implementation, and environmental CSR. It aims effects on business performance. This methodology includes data gathered from primary and secondary. Understanding how sustainable practices impact business performance and provides insights into the practical implementation of green industry principles and CSR for improved operational efficiency, business longevity, and social responsibility.

Keywords

Green Industry, Corporate Social Responsibility, Business Sustainability, Company Performance.

1. Introduction

In the contemporary business environment, industries are increasingly pressured to adapt to the growing demands for sustainability, not only to meet environmental regulations but also to enhance long-term competitiveness. This shift toward sustainable business practices has seen the rise of Green Industry initiatives and Corporate Social Responsibility (CSR) as central strategies for companies to maintain their market positions while addressing environmental challenges. Companies in the food manufacturing sector, particularly in Central Java, are no exception. The adoption of green practices has become an essential part of their operational framework as they seek to balance economic goals with environmental stewardship.

As per the Central Java Bureau of Statistics, the food manufacturing industry comprises 31.53% of the industrial makeup in the region, with approximately 894 medium and large food manufacturing companies operating across the province. These companies play a pivotal role in both the local economy and environmental impact. Given the significant scale of the industry, efforts to integrate sustainability are crucial for reducing the sector's ecological footprint while enhancing business performance

Over recent years, there has been a noticeable shift in how companies approach their business strategies, with green industry practices taking center stage. The term "green industry" refers to practices that emphasize resource efficiency, waste reduction, and environmental impact minimization throughout the production process. This approach has led companies to innovate in energy use, reduce their carbon emissions, and optimize supply chain efficiency. Sangwan and Mittal (2015) argue that modern manufacturing must adopt green innovations to ensure long-term viability. However, the adoption of these practices has been met with challenges, particularly among small to medium enterprises (SMEs) that often struggle with limited resources to implement such comprehensive changes.

The food manufacturing sector's transition to a more sustainable model is driven by both internal and external factors. Internally, companies are seeking operational efficiencies that can reduce costs and improve productivity. Externally, pressure from consumers, stakeholders, and regulators is pushing companies to adopt more environmentally friendly practices. In addition to green industry practices, Corporate Social Responsibility (CSR) has emerged as a key component of sustainability efforts, particularly in how businesses engage with their surrounding communities and mitigate environmental impacts. CSR in the context of the food manufacturing industry involves initiatives such as reducing waste, supporting local communities, and ensuring ethical supply chains.

Table 1. Pre-Survey on the Performance of Food Manufacturing Industry in Central Java (2024)

Indicator	**Yes (%)**	**Yes (%)**
Sales Growth Has Reached Targets	80	20
Company Profits Have Met Expectations	86,7	13,3
Productivity is on Target	76,3	23,7
Efficient Production Practices Adopted	80	20

The data presented in Table 1 highlights the performance of medium to large-scale food manufacturing companies in Central Java. The pre-survey, conducted in 2024, reveals that 80% of companies have achieved sales growth targets, while 86.7% reported profitability in line with expectations. However, the data also indicates areas for improvement, with 23.7% of companies acknowledging gaps in

productivity. These findings underline the importance of adopting green industry practices and CSR to sustain business growth and competitiveness.

The implementation of green industry practices and CSR is not just a compliance measure but a strategic tool for enhancing business performance. Companies that have adopted these initiatives report improved operational efficiency, enhanced brand reputation, and better stakeholder relationships. According to Xin (2023), green industry practices and environmental CSR contribute to long-term business sustainability by driving innovation and improving corporate image. As industries face increasing scrutiny from both consumers and regulators, those that invest in sustainability are more likely to thrive in the future.

This study aims to explore the relationship between green industry practices, CSR, and business performance in the food manufacturing sector in Central Java. By examining the direct and indirect effects of these practices, the research seeks to provide insights into how sustainability can be leveraged as a competitive advantage, ensuring both business success and environmental responsibility. Through a structured empirical approach, this research will shed light on the critical role of sustainability in enhancing the performance of food manufacturing companies.

2. Literature Review

The concept of green industry has become a key component in the evolution of business practices aimed at reducing environmental impacts and promoting sustainability. Introduced in various international conferences, such as the Manila Declaration on Green Industry (2009), green industry focuses on sustainable production processes that aim to balance industrial growth with environmental preservation. According to Dewayana (2013), the green industry involves the efficient use of resources, reduction of waste, and minimization of carbon emissions in industrial activities.

Green industry implementation entails several key practices that aim to improve resource efficiency while minimizing negative environmental effects. These practices are designed to align industrial production with environmental sustainability, including:

a. Resource Efficiency: Companies focus on using materials more efficiently, which reduces waste and lowers operational costs.
b. Energy Conservation: Implementing energy-efficient technologies and reducing reliance on fossil fuels are critical in reducing greenhouse gas emissions.
c. Waste Management and Recycling: Manufacturing processes are optimized to minimize waste and promote recycling and reusing materials, contributing to a circular economy.

Previous studies have established the positive impact of green industry practices on business performance. Research by Sajid et al. (2023) highlights the positive relationship between green manufacturing and business sustainability, with companies reporting enhanced operational efficiency and a stronger competitive position in the market. However, challenges persist, especially for small and medium enterprises (SMEs), which often lack the resources and knowledge to implement comprehensive green practices effectively.

Corporate Social Responsibility (CSR), particularly in the environmental context, has emerged as a strategic initiative for businesses to engage in sustainable practices while enhancing their social and environmental impact. CSR involves voluntary activities undertaken by companies to improve their environmental footprint, such as reducing emissions, conserving natural resources, and supporting community-based environmental programs.

CSR practices have become increasingly important as companies recognize the value of contributing positively to society and the environment. Environmental CSR initiatives typically include:

a. Waste Reduction: Programs aimed at minimizing the environmental footprint through waste management and recycling initiatives.
b. Energy Efficiency: Adoption of energy-saving technologies and renewable energy sources to decrease carbon emissions.
c. Community Engagement: Projects that promote environmental conservation and awareness within local communities.

According to a study by Faozi et al. (2023), CSR activities are positively associated with improved company reputation and stakeholder trust, which in turn enhance business performance. Additionally, companies that adopt CSR initiatives related to environmental sustainability are better positioned to meet regulatory requirements and market demands for eco-friendly products.

Business sustainability refers to the ability of a company to operate successfully over the long term while balancing economic, environmental, and social considerations. This concept has gained traction as industries face growing pressures from stakeholders, consumers, and regulatory bodies to adopt sustainable business models. Companies that prioritize sustainability are better equipped to mitigate risks, enhance operational resilience, and improve stakeholder engagement.

Sustainability efforts often involve integrating green industry practices and CSR into the core business strategy. Xin (2023) argues that businesses focusing on sustainability enjoy long-term benefits, including improved operational efficiency, reduced environmental liabilities, and a stronger corporate reputation. These elements contribute to better financial performance, as consumers and investors increasingly favor companies that are committed to environmental and social responsibility.

The Resource-Based View (RBV) theory, introduced by Barney (1991), serves as a foundation for understanding how businesses achieve a competitive advantage through their unique internal resources. The RBV framework posits that companies can gain a sustained competitive advantage by effectively managing their tangible and intangible resources, such as human capital, technology, and environmental initiatives. These resources must meet the criteria of being valuable, rare, difficult to imitate, and non-substitutable (VRIN) to deliver a lasting advantage.

In the context of this research, the implementation of green industry practices and CSR can be viewed as valuable resources that enhance business sustainability and performance. By leveraging these resources, companies can improve their operational efficiency, reduce environmental risks, and create long-term value for stakeholders.

3. Methods

This study adopts a quantitative research approach to analyze the relationship between green industry practices, Corporate Social Responsibility (CSR), and business performance in the food manufacturing sector in Central Java. A quantitative approach is appropriate for this study because it allows for the measurement and analysis of variables through structured data collection methods, providing a clear understanding of the impact of green practices and CSR on business sustainability (Creswell, 2014).

The primary objective of this research is to examine the effects of green industry practices and environmental CSR on business performance and sustainability. Data collection for this study was carried out using a combination of surveys and secondary data sources. The survey was distributed to a sample of managers from medium and large food manufacturing companies in Central Java, focusing on their

implementation of green practices and CSR activities. The sample was selected based on the company's size and involvement in environmental initiatives to ensure the findings are representative of the broader industry.

A structured questionnaire was developed to collect data on key variables such as business performance, green industry implementation, and CSR initiatives. The questionnaire was designed using a Likert scale, allowing respondents to rate their level of agreement with various statements related to green practices, CSR, and business outcomes. This approach facilitated the collection of quantifiable data that could be analyzed statistically to identify relationships between the variables.

The study utilizes Structural Equation Modeling (SEM) to test the hypotheses and assess the strength of the relationships between green industry practices, CSR, business sustainability, and performance. SEM is an advanced statistical technique that enables researchers to evaluate complex relationships between multiple variables (Byrne, 2016). In this research, SEM was used to determine the direct and indirect effects of green practices and CSR on business performance and sustainability.

Furthermore, this study acknowledges the importance of external factors, such as regulatory pressure and market competition, in influencing the adoption of green industry practices and CSR. As such, data regarding external market conditions and industry trends were gathered from secondary sources, including industry reports and government publications, to complement the survey data. These sources provided additional context for understanding how external pressures shape companies' sustainability initiatives and overall business strategies (Yin, 2011).

The use of quantitative analysis in this research is expected to provide empirical insights into how green industry practices and CSR contribute to business performance. By examining the data through statistical models, this study aims to offer evidence-based recommendations for companies seeking to enhance their business sustainability and align their operations with environmental objectives.

4. Results

4.1. Descriptive Analysis

4.1.1 Respondents Profile

The respondents of this study consist of owners and managers from food manufacturing companies operating in Central Java, Indonesia, selected based on their implementation of green industry practices and environmental CSR. Using purposive sampling, 116 valid responses were collected. The majority of the respondents held the position of Board of Director (57.76%), followed by Managers (31.90%). Most of the companies have been operational for 31–40 years (25%) or more than 50 years (23.28%). Regarding company size, 45.69% employ 251–500 workers, and 30.17% have 250 or fewer employees.

4.1.2 Respondents Profile

All variables were measured using a 7-point Likert scale and categorized based on index score ranges (Low: 14.26–42.86, Medium: 42.87–71.43, High: 71.44–100).

1. Green Industry Implementation received a high average score of 80.87, with individual items ranging from 78.76 to 83.25.
2. CSR Implementation also received a high rating with a mean score of 78.05, indicating a strong perceived commitment to environmental and social responsibility.
3. Business Sustainability scored an average of 80.44, suggesting a positive perception of long-term viability.
4. Business Performance yielded a mean score of 78.82, reflecting strong performance perceptions among respondents.

4.2. Confirmatory Factor Analysis (CFA)

4.2.1 Exogenous Constructs

CFA was conducted on two exogenous variables: Green Industry Implementation and CSR. The initial model had a chi-square value of 73.848 ($p < 0.05$), indicating poor fit. After model modification, the chi-square improved to 43.281 ($p = 0.071$), achieving a good fit. All item loadings were above 0.50, supporting convergent validity, and implied correlation matrices confirmed discriminant validity.

4.2.2 Endogenous Constructs

CFA for Business Sustainability and Business Performance also showed good model fit (chi-square = 43.281, $p = 0.222$). All indicators had loading values > 0.70, supporting convergent validity, and discriminant validity was confirmed through implied correlation matrices.

4.3. Structural Equation Modeling (SEM)

4.3.1 Model Assumptions

1. Sample Size: With 116 respondents and 20 indicators, the sample met the SEM adequacy requirement (5–10 respondents per indicator).
2. Normality: All critical ratios (CR) of skewness and kurtosis were within ±2.58, indicating normal distribution.
3. Outliers: No significant univariate or multivariate outliers were found.
4. Multicollinearity: The determinant of the sample covariance matrix was 0.0000003, indicating minimal multicollinearity issues.
5. Residuals: A few residuals exceeded ±2.58 but remained within acceptable thresholds.
6. Reliability and Variance Extracted: All constructs had composite reliability > 0.70 and variance extracted > 0.50.

4.3.2 Goodness-of-Fit Indices

The SEM model achieved acceptable fit levels:

1. Chi-Square = 186.543 ($p = 0.074$)
2. RMSEA = 0.038
3. CFI = 0.982, TLI = 0.979
4. GFI and AGFI were slightly below the ideal cut-off but still acceptable.

4.4. Hypothesis Testing

SEM analysis yielded the following results:

Table 2. Hypothesis Testing

Hypothesis	Relationship	Estimate	p-value	Result
H1	Business Sustainability → Business Performance	0.311	<0.001	Supported
H2	Green Industry → Business Performance	0.228	0.012	Supported
H3	Green Industry → Business Sustainability	0.303	0.006	Supported
H4	CSR → Business Performance	0.180	0.020	Supported
H5	CSR → Business Sustainability	0.303	0.001	Supported

4.5. Direct, Indirect and Total Effects

The model also analyzed mediation through Business Sustainability:

Table 3. Direct, Indirect and Total Effects

Effect Type	From	To
Direct	Green Industry → Business Performance	0.235
Indirect	Green Industry → Business Performance (via Sustainability)	0.097
Total	Green Industry → Business Performance	0.333
Direct	CSR → Business Performance	0.213
Indirect	CSR → Business Performance (via Sustainability)	0.112
Total	CSR → Business Performance	0.325

These results confirm the mediating role of Business Sustainability, with Green Industry Implementation showing the strongest total effect on Business Performance.

5. Conclusion

This study investigates the influence of green industry practices and environmental Corporate Social Responsibility (CSR) on the sustainability and performance of food manufacturing companies in Central Java. Through an empirical analysis using quantitative data and Structural Equation Modeling (SEM), the research highlights the importance of sustainable practices in enhancing business competitiveness and long-term viability.

The findings reveal several key advantages of adopting green industry practices and CSR initiatives, including:

1. Enhanced Operational Efficiency: The implementation of green industry practices leads to more efficient resource usage, reduced waste, and lower operational costs, contributing to better business performance.
2. Improved Risk Management: By aligning with environmental regulations and addressing stakeholder concerns, companies can better manage environmental risks, which in turn improves their corporate image and reduces potential liabilities.
3. Increased Stakeholder Engagement: CSR initiatives that focus on environmental sustainability foster stronger relationships with stakeholders, including customers, suppliers, and regulators, thus improving trust and business resilience.
4. Sustainable Growth: The integration of green practices and CSR contributes to long-term business sustainability by ensuring that companies not only meet current market demands but are also well-positioned to adapt to future environmental challenges.

This study emphasizes that the integration of green industry principles and CSR into business strategies is not just beneficial for environmental stewardship but also offers tangible business advantages. Companies that invest in these initiatives are better equipped to enhance their operational performance, manage risks, and maintain a competitive edge in a market that increasingly values sustainability. In conclusion, this research highlights the critical role of green industry practices and environmental CSR in driving business sustainability and suggests that companies should continue to prioritize these efforts to ensure both environmental and business success.

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