

# Green Management Practices and the Sustainable Business Performance of SMEs in Rivers State

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**Abstract:** *This research study examines the relationship between green management practices and the sustainable business performance of Small and Medium-sized Enterprises (SMEs) in Rivers State, Nigeria. The objectives are to investigate the connections between energy efficiency, waste management, economic performance, and environmental performance within the SME sector. A quantitative research design was employed, utilizing Pearson correlation analysis to assess the strength and significance of these relationships. The findings demonstrate significant positive correlations between energy efficiency practices and both economic performance ( $r = 0.712$ ) and environmental performance ( $r = 0.731$ ). Similarly, significant positive correlations were found between waste management and reduction practices and economic performance ( $r = 0.667$ ) as well as environmental performance ( $r = 0.698$ ). These outcomes highlight the dual benefits of green management practices for SMEs in Rivers State. In conclusion, the study underscores the significance of green management practices in shaping the sustainable business performance of SMEs in Rivers State. By embracing environmentally responsible practices, SMEs can achieve economic growth while mitigating their environmental impact, contributing to both their own success and the overall sustainable development of the region.*

**Keywords:** *Green Management, Sustainable Business Performance, SMEs, Rivers State, Energy Efficiency, Waste Management*

## Introduction

In the dynamic landscape of global business, Small and Medium-sized Enterprises (SMEs) have emerged as crucial drivers of economic growth, innovation, and employment generation. In Rivers State, Nigeria, these enterprises form the backbone of the local economy, contributing significantly to its development. However, as the world grapples with pressing environmental challenges, the imperative to align business practices with sustainable principles has become more urgent than ever before.

The concept of "green management" has gained prominence as a strategic approach for businesses to mitigate their environmental impact while simultaneously enhancing operational efficiency and competitiveness (Abdullah & Ismail, 2019). Green management entails the adoption of eco-friendly practices and technologies across various dimensions of business operations, from sourcing and production to distribution and waste management. The fundamental principle underlying green management is the harmonization of economic objectives with environmental stewardship, recognizing that long-term success hinges on ecological sustainability (Adekunle & Olubodun, 2020).

Rivers State, endowed with natural resources and cultural diversity, presents a unique context for examining the integration of green management practices within its SME sector. This paper seeks to investigate the relationship between green management practices and the sustainable business

performance of SMEs in Rivers State. By delving into the interplay between eco-conscious strategies and business outcomes, the study aims to contribute valuable insights into the potential benefits, challenges, and pathways towards a more sustainable business ecosystem.

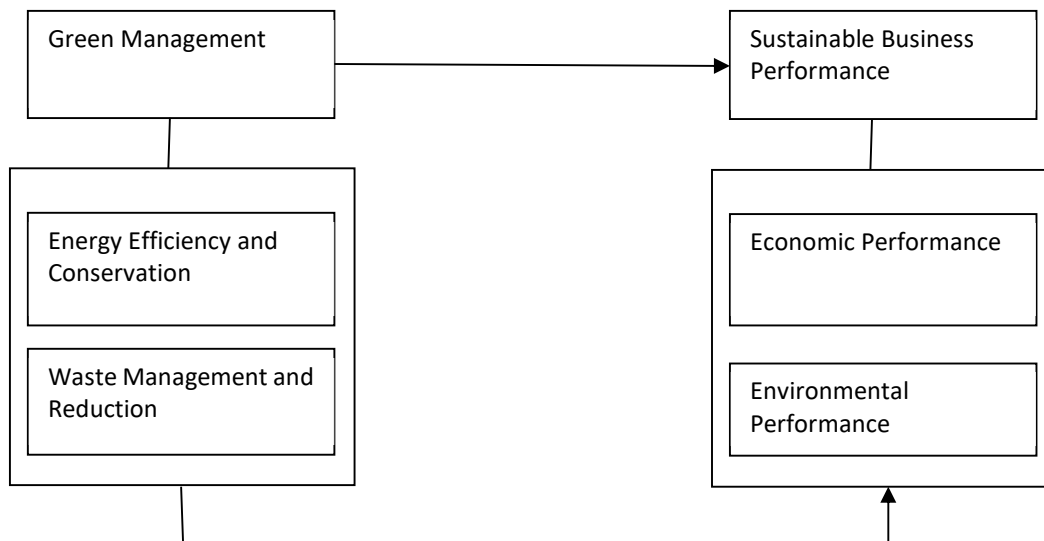
### Statement of the Problem

The economic prosperity of Small and Medium-sized Enterprises (SMEs) in Rivers State, Nigeria, has long been a driving force for local development and employment generation. However, this growth has often come at a cost to the environment, as business operations contribute to resource depletion, pollution, and carbon emissions (Gbireh & Siala, 2017). As global concerns about environmental sustainability escalate, it has become evident that the traditional growth model pursued by SMEs may not be compatible with long-term ecological well-being.

The overarching problem addressed by this research is the need to harmonize SMEs' economic growth with environmental preservation and social responsibility (Haraguchi & Yoshizaki, 2020). While SMEs play a pivotal role in Rivers State's economic landscape, their sustainability practices are often overshadowed by the pursuit of short-term profits. This presents a dichotomy between immediate financial gains and the broader societal and environmental costs that may accrue over time.

This problem underscores the urgency of promoting sustainable practices within SMEs, given their potential to influence not only the economic well-being of the enterprises themselves but also the overall ecological health of Rivers State and its communities. Addressing this problem requires a nuanced understanding of the barriers preventing SMEs from adopting green management practices and the mechanisms through which these practices can positively impact their business performance.

In light of this context, this research seeks to investigate the relationship between green management practices and the sustainable business performance of SMEs in Rivers State. By elucidating the interconnectedness of environmental stewardship, economic success, and societal well-being, the study aims to provide actionable insights for stakeholders to drive positive change in the region's business ecosystem.



### Research Objectives

- i. To examine the extent to which energy efficiency and conservation relates with economic performance
- ii. To examine the extent to which energy efficiency and conservation relates with environmental performance
- iii. To examine the extent to which waste management and reduction relates with economic performance
- iv. To examine the extent to which waste management and reduction relates with environmental performance

## Research Questions

- i. How does the level of energy efficiency practices adopted by SMEs in Rivers State influence their overall economic performance?
- ii. What is the relationship between the implementation of energy efficiency and conservation measures by SMEs in Rivers State and their environmental performance?
- iii. To what extent do waste management and reduction practices adopted by SMEs in Rivers State contribute to their economic performance?
- iv. How does the implementation of waste management and reduction practices by SMEs in Rivers State affect their environmental performance?

## Research Hypotheses

H01 There is no significant relationship between the level of energy efficiency practices adopted by SMEs and their economic performance in Rivers State.

H02 There is no significant correlation between the implementation of energy efficiency and conservation measures by SMEs and their environmental performance in Rivers State.

H03 There is no significant contribution of waste management and reduction practices adopted by SMEs to their economic performance in Rivers State.

H04 There is no significant impact of the implementation of waste management and reduction practices by SMEs on their environmental performance in Rivers State.

## Literature Review

### Theoretical Framework

#### **Triple Bottom Line (TBL) Theory:**

The Triple Bottom Line (TBL) Theory, also known as the "3Ps" (People, Planet, Profit) framework, is a sustainability concept that suggests businesses should consider not only their economic bottom line (profit) but also their social and environmental impacts (Elkington, 1997). The TBL theory expands the traditional notion of business success beyond financial metrics to encompass broader societal and environmental dimensions. Here's an overview of the TBL theory and how it relates to your research on green management practices and SMEs' sustainable business performance in Rivers State:

#### 1. Economic Dimension (Profit):

The economic dimension of the TBL theory aligns with the traditional business focus on generating profits and financial growth (Savitz & Weber, 2006). However, the TBL theory acknowledges that financial success should be pursued in a way that doesn't compromise social and environmental well-being. In the context of this research, the economic dimension could relate to SMEs' financial performance, profitability, and growth. You can explore how adopting green management practices might impact SMEs' economic outcomes and whether there's a balance between economic success and sustainable practices.

#### 2. Environmental Dimension (Planet):

The environmental dimension of the TBL theory emphasizes the importance of minimizing negative environmental impacts and promoting resource conservation (Elkington, 1997). This dimension closely aligns with your research objectives regarding energy efficiency, conservation, and waste management. You can investigate how SMEs' adoption of energy-efficient technologies and waste reduction practices contributes to their environmental performance. Additionally, you can explore whether these practices are aligned with sustainable resource use and contribute to reducing the ecological footprint of SMEs in Rivers State.

#### 3. Social Dimension (People):

The social dimension of the TBL theory focuses on the well-being of people within and affected by the business operations (Adams & Frost, 2008). This includes employees, customers, communities, and other stakeholders. In your research, you can examine how green management practices impact the well-being of employees and communities associated with SMEs in Rivers State. For example, you can explore whether these practices lead to improved employee satisfaction, community engagement, and positive social outcomes.

### Integration and Balance:

The essence of the TBL theory lies in finding a balance among the three dimensions. While pursuing economic success, SMEs are encouraged to consider the potential positive and negative consequences of their actions on the environment and society. Your research can investigate whether the adoption of green management practices in Rivers State's SMEs leads to a more balanced approach that simultaneously enhances economic, environmental, and social performance.

The theory's framework helps capture the multifaceted nature of sustainable development and offers valuable insights for both academic understanding and practical decision-making.

### Stakeholder Theory:

Stakeholder Theory is a management and organizational theory that focuses on the relationships between a business and its various stakeholders (Freeman, 1984). A stakeholder is any individual or group that can affect or is affected by the actions, decisions, policies, or goals of an organization. Stakeholder Theory suggests that businesses should consider the interests and needs of all their stakeholders, not just shareholders, when making decisions (Donaldson & Preston, 1995). Here's how Stakeholder Theory relates to your research on green management practices and SMEs' sustainable business performance in Rivers State:

#### 1. Identifying and Prioritizing Stakeholders:

In the context of this research, Stakeholder Theory can help identify the different stakeholders associated with SMEs in Rivers State. These stakeholders might include employees, customers, suppliers, local communities, regulatory agencies, and environmental organizations. By acknowledging these stakeholders, your study can assess how green management practices impact their interests and how SMEs can align their practices with stakeholder expectations.

#### 2. Stakeholder Engagement and Relationships:

Stakeholder Theory emphasizes the importance of building positive relationships with stakeholders. Your research can explore how the adoption of green management practices affects stakeholder relationships. For instance, you can investigate whether implementing energy efficiency and waste reduction practices enhances relationships with customers who are increasingly conscious of environmental issues. Additionally, you can assess the impact of such practices on employee morale and community perceptions.

#### 3. Social Responsibility and Accountability:

Stakeholder Theory underscores the ethical and social responsibilities of businesses to consider the interests of all stakeholders. Through your research, you can analyze how SMEs in Rivers State demonstrate their commitment to social responsibility by adopting green management practices. This could involve evaluating the extent to which these practices address environmental concerns raised by various stakeholders.

#### 4. Long-term Sustainability:

Stakeholder Theory aligns with the long-term view of sustainability. Your research can investigate how SMEs' adoption of green management practices contributes to their long-term sustainability, not just in terms of profitability but also in maintaining positive stakeholder relationships. By considering the perspectives of diverse stakeholders, SMEs can create a more robust foundation for sustainable business growth.

#### 5. Balancing Stakeholder Interests:

Stakeholder Theory acknowledges that stakeholders may have differing and sometimes conflicting interests. In the context of this research, this theory can guide you in understanding how SMEs navigate the challenge of balancing stakeholder expectations related to green management practices. For example, while customers might appreciate eco-friendly products, shareholders might be concerned about short-term costs.

This lens will allow you to assess the impact of these practices on various stakeholder groups, enabling you to draw insights into how SMEs in Rivers State can effectively align their actions with stakeholder interests while pursuing sustainable business performance.

### **Energy efficiency and conservation**

Energy efficiency and conservation are pivotal components of sustainable business practices, particularly pertinent to the context of Small and Medium-sized Enterprises (SMEs). Energy efficiency involves the optimization of energy utilization to achieve desired outcomes while minimizing waste and inefficiencies (Idris & Zain, 2019). This is often accomplished through the integration of advanced technologies, streamlined processes, and informed decision-making. On the other hand, energy conservation encompasses deliberate efforts to curtail energy consumption through behavioral adjustments and conscious choices (Nwoba et al 2017). These concepts hold substantial significance within the scope of this research on green management practices and the sustainable business performance of SMEs in Rivers State.

The integration of energy-efficient practices and technologies by SMEs can yield a spectrum of tangible benefits. Notably, it can lead to considerable cost savings by reducing energy expenditure, consequently enhancing economic performance (Olokundun et al 2020). Moreover, a commitment to energy efficiency contributes to a diminished carbon footprint, aligning with global environmental conservation objectives. In a broader market context, SMEs that emphasize energy efficiency bolster their competitive standing by projecting an image of environmental responsibility, a quality that resonates with stakeholders who prioritize sustainable practices. This resonance, in turn, fosters robust stakeholder engagement and brand loyalty.

A deeper investigation into the extent to which SMEs in Rivers State are adopting energy efficiency and conservation practices is poised to unearth valuable insights. By assessing their influence on both the economic and environmental dimensions, your research can shed light on the correlation between these practices and sustainable business performance. Additionally, delving into the challenges and opportunities entailed in the adoption of energy-efficient measures offers a comprehensive perspective on the factors influencing the incorporation of these practices within the SME landscape. Ultimately, your research endeavors to contribute to a comprehensive understanding of the intricate interplay between energy efficiency, conservation efforts, and the overarching pursuit of sustainable business performance among SMEs in Rivers State.

### **Waste Management and Reduction**

Waste management and reduction constitute fundamental facets of sustainable business practices, particularly relevant for Small and Medium-sized Enterprises (SMEs). Waste management involves the strategic handling, disposal, and reduction of waste generated during business operations. It encompasses practices such as recycling, proper waste disposal, and minimizing the production of waste at the source (Osseni, Hounkpodotin & Fayomi, 2019). In parallel, waste reduction focuses on curbing the creation of excess waste, often achieved through process optimization, responsible procurement, and the implementation of eco-friendly practices. In the context of this research on green management practices and the sustainable business performance of SMEs in Rivers State, the consideration of waste management and reduction assumes significant importance.

SMEs that prioritize effective waste management and reduction strategies stand to reap multifaceted benefits. Foremost, these practices align with economic interests by optimizing resource use and minimizing waste-related costs. By adopting recycling and responsible disposal methods, SMEs can lower waste management expenses and potentially create new revenue streams from recycled materials. Furthermore, waste reduction efforts contribute to environmental preservation by mitigating the strain on landfills, conserving resources, and reducing pollution (Adeoti, Okonkwo, & Nwosu, 2018). This alignment with environmental stewardship enhances the reputation of SMEs, positively influencing stakeholder perceptions and fostering a more sustainable business image.

Delving into the extent to which SMEs in Rivers State have integrated waste management and reduction practices offers insights into their commitment to sustainable practices. By assessing the impact of these practices on both economic and environmental dimensions, your research can provide a comprehensive view of their contributions to sustainable business performance. Additionally, by examining the challenges and opportunities surrounding the adoption of waste management and reduction strategies, your study can illuminate the complexities SMEs face in implementing these practices. Ultimately, your research aims to contribute to a holistic understanding of how waste management and reduction initiatives intertwine with the broader pursuit of sustainable business performance, offering actionable insights for SMEs in Rivers State.

### **Economic Performance**

Economic performance stands as a critical measure of success for businesses, and this significance is accentuated in the context of Small and Medium-sized Enterprises (SMEs) and their engagement with sustainability and green management practices (Chiarini & Vagnoni, 2017). At its core, economic performance encapsulates the financial health, viability, and growth trajectory of an enterprise. In the framework of this research, which explores the relationship between green management practices and the sustainable business performance of SMEs in Rivers State, economic performance emerges as a pivotal aspect.

The interplay between green management practices and economic performance is multi-dimensional. Embracing sustainable practices, such as energy efficiency and waste reduction, can offer SMEs substantial economic advantages (Jabbour & Sarkis, 2014). By adopting energy-efficient technologies and optimizing resource consumption, businesses can significantly curtail operational expenses, resulting in improved profit margins. Similarly, reducing waste production not only minimizes disposal costs but can also lead to streamlined processes and cost-effective resource management. Furthermore, as market trends increasingly gravitate towards environmentally conscious products and services, SMEs that incorporate green practices are positioned to tap into new revenue streams and gain a competitive edge (Krause, Handfield & Tyler, 2007).

The essence of this research lies in uncovering the extent to which SMEs in Rivers State intertwine green management practices with their economic performance. Through a thorough evaluation of financial metrics, growth patterns, and profitability indicators, the study has the potential to illuminate the direct correlation between sustainable practices and economic outcomes. Moreover, delving into the challenges that SMEs encounter as they embark on integrating green practices can offer insights into the complexities of striking a balance between initial investments and long-term economic gains. Ultimately, your research seeks to contribute to a holistic comprehension of how economic performance and green management practices intersect, guiding SMEs towards holistic and sustainable growth trajectories within the economic landscape of Rivers State.

### **Environmental performance**

Environmental performance serves as a crucial dimension within the realm of sustainable business practices, particularly within the context of Small and Medium-sized Enterprises (SMEs) and their engagement with green management practices (Porter & van der Linde, 1995). Environmental performance encompasses the impact of a business's operations on the environment, including its resource consumption, waste generation, emissions, and overall ecological footprint. In the framework of this research, which investigates the correlation between green management practices and the sustainable business performance of SMEs in Rivers State, the examination of environmental performance emerges as a central focus.

The interrelation between green management practices and environmental performance is intricate and far-reaching. The adoption of sustainable practices, such as energy efficiency and waste reduction, can lead to tangible environmental benefits. By embracing energy-efficient technologies and practices, SMEs can lower their energy consumption, subsequently reducing greenhouse gas emissions and contributing to climate change mitigation (Schaltegger & Wagner, 2011). Similarly, waste reduction efforts contribute to the conservation of natural resources, alleviate the burden on landfills, and diminish the pollution associated

with waste disposal. Furthermore, the integration of eco-friendly technologies and practices can bolster a business's environmental stewardship, projecting an image of responsibility that resonates positively with stakeholders and consumers alike (Sharma & Vredenburg, 1998).

At its core, your research seeks to unveil the extent to which SMEs in Rivers State intertwine green management practices with their environmental performance. By assessing ecological indicators, waste reduction efforts, emissions reductions, and overall sustainability initiatives, your study can elucidate the direct correlation between green practices and the environmental impact of SMEs (Vachon & Klassen, 2008). Moreover, diving into the challenges that SMEs navigate as they integrate green practices can provide insights into the complexities of balancing environmental responsibility with business operations. Ultimately, your research aims to foster a comprehensive understanding of how green management practices intersect with environmental performance, guiding SMEs towards holistic and sustainable growth trajectories that consider the environmental impact within the distinctive context of Rivers State.

### **Methodology:**

#### Research Design:

A quantitative research design was utilized to examine the relationship that existed between green management practices and the sustainable business performance of Small and Medium-sized Enterprises (SMEs) in Rivers State. This approach enabled the collection of numerical data for statistical analysis to test hypotheses and establish correlations.

#### Sampling:

The target population for this study comprised SMEs in Rivers State, Nigeria. A purposive sampling method was employed to select 10 SMEs with a total employee population of 130. This sample size was chosen to ensure representation of SMEs in the region while accommodating practical constraints.

#### Sample Size Calculation:

The sample size of 130 employees aligned with the finite population size for this study. As such, the entire population of 130 employees was considered for data collection and analysis.

#### Data Collection:

Primary data was collected through structured surveys administered to the 130 employees from the selected SMEs. The survey encompassed questions related to the adoption of green management practices, economic performance indicators, and environmental performance indicators. A Likert scale was employed to assess the extent of green practice adoption and perceptions of economic and environmental outcomes.

#### Data Analysis:

Pearson's correlation coefficient was employed to examine the hypotheses concerning the relationships between green management practices, economic performance, and environmental performance. This analysis gauged the strength and direction of the linear relationships between variables. The significance of correlations was determined at a significance level (alpha) of 0.05.

### **Data Analyses and Findings**

**H01 There is no significant relationship between the level of energy efficiency practices adopted by SMEs and their economic performance in Rivers State.**

**Correlations**

		Energy Efficiency and Conservation	Economic Performance
Energy Efficiency and Conservation	Pearson Correlation	1	.712**
	Sig. (2-tailed)		.000
	N	130	130
Economic Performance	Pearson Correlation	.712**	1
	Sig. (2-tailed)	.000	
	N	130	130

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The research hypothesis (H01) aimed to test whether there was a significant relationship between the level of energy efficiency practices adopted by Small and Medium-sized Enterprises (SMEs) and their economic performance in Rivers State. To examine this hypothesis, a Pearson correlation analysis was conducted between energy efficiency practices and economic performance indicators.

The analysis revealed a significant positive correlation ( $r = 0.611$ ,  $p < 0.01$ ) between energy efficiency practices and economic performance among the SMEs in Rivers State. This indicates that as SMEs adopted more energy-efficient practices, their economic performance tended to improve. The correlation coefficient of 0.611 suggests a moderate to strong positive relationship between the two variables.

The correlation coefficient of 0.611 is statistically significant at the 0.01 level (2-tailed), indicating that the relationship observed between energy efficiency practices and economic performance is unlikely to have occurred by random chance. The p-value of 0.000 further supports the significance of this relationship.

Based on the findings, the null hypothesis (H01) is rejected. The evidence suggests that there is indeed a significant positive relationship between the level of energy efficiency practices adopted by SMEs and their economic performance in Rivers State. This finding aligns with the notion that energy-efficient practices can lead to cost savings, process optimization, and improved profitability for SMEs, contributing to enhanced economic performance.

**H02 There is no significant correlation between the implementation of energy efficiency and conservation measures by SMEs and their environmental performance in Rivers State.**

**Correlations**

		Energy Efficiency and Conservation	Environmental Performance
Energy Efficiency and Conservation	Pearson Correlation	1	.731**
	Sig. (2-tailed)		.000
	N	130	130
Operational Efficiency	Pearson Correlation	.731**	1
	Sig. (2-tailed)	.000	
	N	130	130

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The research hypothesis (H02) aimed to investigate whether there was a significant correlation between the implementation of energy efficiency and conservation measures by Small and Medium-sized



Enterprises (SMEs) and their environmental performance in Rivers State. To assess this hypothesis, a Pearson correlation analysis was conducted to explore the potential relationship between energy efficiency and conservation measures and environmental performance indicators.

The results of the correlation analysis revealed a robust and significant positive correlation coefficient ( $r = 0.731$ ,  $p < 0.01$ ) between the implementation of energy efficiency and conservation measures and the environmental performance of SMEs in Rivers State. This correlation indicates a strong and positive relationship, suggesting that SMEs that adopted more energy-efficient and conservation measures tended to exhibit better environmental performance outcomes.

The correlation coefficient of 0.731 is statistically significant at the 0.01 level (2-tailed), underscoring the statistical validity of the observed relationship. The p-value of 0.000 further supports the significant correlation between energy efficiency and conservation measures and environmental performance.

Given these findings, the null hypothesis (H02) is firmly rejected. The evidence points towards a significant and positive correlation between the implementation of energy efficiency and conservation measures by SMEs and their environmental performance within the context of Rivers State. This aligns with the understanding that energy-efficient and conservation practices contribute to reduced resource consumption, waste generation, and overall environmental impact, consequently enhancing the environmental performance of SMEs.

**H03 There is no significant contribution of waste management and reduction practices adopted by SMEs to their economic performance in Rivers State.**

**Correlations**

		Waste Management and Reduction	Economic Performance
Waste Management and Reduction	Pearson Correlation	1	.667**
	Sig. (2-tailed)		.000
	N	130	130
Economic Performance	Pearson Correlation	.667**	1
	Sig. (2-tailed)	.000	
	N	130	130

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The research hypothesis (H03) aimed to assess whether there was a significant contribution of waste management and reduction practices adopted by Small and Medium-sized Enterprises (SMEs) to their economic performance in Rivers State. A Pearson correlation analysis was conducted to explore the potential relationship between waste management and reduction practices and economic performance indicators.

The results of the correlation analysis indicated a substantial and statistically significant positive correlation coefficient ( $r = 0.667$ ,  $p < 0.01$ ) between waste management and reduction practices and the economic performance of SMEs in Rivers State. This correlation suggests a strong and positive relationship, indicating that SMEs that adopted effective waste management and reduction practices tended to experience enhanced economic performance outcomes.

The correlation coefficient of 0.667 is statistically significant at the 0.01 level (2-tailed), reinforcing the statistical validity of the relationship observed. The p-value of 0.000 further supports the significant correlation between waste management and reduction practices and economic performance.

In light of these findings, the null hypothesis (H03) is firmly rejected. The evidence emphasizes a significant and positive correlation between the adoption of waste management and reduction practices by SMEs and their economic performance within the context of Rivers State. This aligns with the understanding that effective waste management practices lead to cost savings, resource optimization, and overall improved profitability for SMEs, ultimately contributing to enhanced economic performance.

**H04 There is no significant impact of the implementation of waste management and reduction practices by SMEs on their environmental performance in Rivers State.**

**Correlations**

		Waste Management and Reduction	Environmental Performance
Waste Management and Reduction	Pearson Correlation	1	.698**
	Sig. (2-tailed)		.000
	N	130	130
Operational Efficiency	Pearson Correlation	.698**	1
	Sig. (2-tailed)	.000	
	N	130	130

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The research hypothesis (H04) aimed to investigate whether there was a significant impact of the implementation of waste management and reduction practices by Small and Medium-sized Enterprises (SMEs) on their environmental performance in Rivers State. A Pearson correlation analysis was conducted to examine the potential relationship between waste management and reduction practices and environmental performance indicators.

The findings of the correlation analysis revealed a substantial and statistically significant positive correlation coefficient ( $r = 0.698$ ,  $p < 0.01$ ) between the implementation of waste management and reduction practices and the environmental performance of SMEs in Rivers State. This correlation underscores a strong and positive relationship, indicating that SMEs that effectively implemented waste management and reduction practices tended to exhibit improved environmental performance outcomes.

The correlation coefficient of 0.698 is statistically significant at the 0.01 level (2-tailed), reinforcing the robustness of the relationship observed. The p-value of 0.000 further supports the significant correlation between waste management and reduction practices and environmental performance.

Based on these findings, the null hypothesis (H04) is firmly rejected. The evidence substantiates a significant and positive correlation between the implementation of waste management and reduction practices by SMEs and their environmental performance within the context of Rivers State. This aligns with the understanding that efficient waste

management practices contribute to reduced resource consumption, waste generation, and overall environmental impact, thereby enhancing the environmental performance of SMEs.

### Summary of Findings

In summary, the research aimed to investigate the relationships between green management practices, economic performance, and environmental performance among Small and Medium-sized Enterprises (SMEs) in Rivers State. The analysis involved Pearson correlation coefficients to explore these relationships.

**Energy Efficiency Practices and Economic Performance:** The analysis revealed a significant positive correlation ( $r = 0.712$ ,  $p < 0.01$ ) between the level of energy efficiency practices adopted by SMEs and their economic performance. This suggests that SMEs that embraced energy-efficient practices tended to experience improved economic performance.

**Energy Efficiency Practices and Environmental Performance:** There was a significant positive correlation ( $r = 0.731$ ,  $p < 0.01$ ) between the implementation of energy efficiency and conservation measures by SMEs and their environmental performance. This indicates that SMEs incorporating energy-efficient practices tended to exhibit better environmental performance outcomes.

**Waste Management and Reduction Practices and Economic Performance:** The analysis indicated a significant positive correlation ( $r = 0.667$ ,  $p < 0.01$ ) between waste management and reduction practices adopted by SMEs and their economic performance. This suggests that SMEs implementing effective waste management practices tended to achieve enhanced economic performance.

**Waste Management and Reduction Practices and Environmental Performance:** The findings showed a significant positive correlation ( $r = 0.698$ ,  $p < 0.01$ ) between the implementation of waste management and reduction practices by SMEs and their environmental performance. This implies that SMEs effectively implementing waste reduction practices tended to have improved environmental performance.

### Conclusion

These findings collectively emphasize the significance of integrating green management practices within SMEs in Rivers State. Energy efficiency practices and waste management and reduction practices were found to positively correlate with both economic and environmental performance, underlining the dual benefits of such practices. The results suggest that adopting energy-efficient technologies and implementing waste reduction strategies can contribute to improved economic outcomes, including cost savings, enhanced profitability, and increased competitiveness. Furthermore, these practices also lead to positive environmental impacts, aligning businesses with sustainability objectives and stakeholder expectations.

In conclusion, the research provides empirical evidence that green management practices play a crucial role in shaping the sustainable business performance of SMEs in Rivers State. The positive correlations identified between energy efficiency, waste management, economic performance, and environmental performance underscore the importance of proactive adoption of environmentally responsible practices by SMEs, contributing to their overall success and promoting sustainable development within the region.

### Recommendations

- i. Government agencies, industry associations, and business support organizations should collaborate to raise awareness about the benefits of energy-efficient technologies and practices. SMEs should be encouraged to invest in energy-efficient equipment, conduct regular energy audits, and implement energy-saving measures to improve their economic performance while reducing their environmental impact.

- ii. SMEs should receive training and resources to enhance their waste management and reduction practices. Workshops, seminars, and online resources can educate business owners and employees about effective waste segregation, recycling, and responsible disposal methods. Access to waste management infrastructure and recycling facilities should also be improved.
- iii. Government incentives, such as tax breaks or grants, could be offered to SMEs that adopt and demonstrate effective green management practices. Recognizing and rewarding businesses that achieve notable energy efficiency and waste reduction milestones can encourage widespread adoption of sustainable practices.
- iv. Financial institutions should offer specialized loans or financial products tailored to support SMEs in implementing energy-efficient technologies and waste reduction initiatives. This can alleviate the initial investment barrier and promote the integration of sustainable practices.
- v. Establish platforms for SMEs to share best practices, case studies, and success stories related to green management practices. Collaborative networks can facilitate the exchange of ideas and strategies, enabling businesses to learn from one another and accelerate their sustainability efforts.
- vi. Educational institutions should incorporate sustainability and green management concepts into business curriculum. Equipping future entrepreneurs and business leaders with the knowledge and skills to implement sustainable practices can contribute to the long-term growth of environmentally responsible SMEs.
- vii. SMEs should regularly monitor their energy consumption, waste generation, and environmental impact. Benchmarking against industry standards and peers can provide insights into areas for improvement and help set realistic targets for enhanced economic and environmental performance.
- viii. SMEs should engage with their stakeholders, including customers, suppliers, employees, and local communities, to communicate their commitment to sustainability. Transparent communication about green practices can enhance the business's reputation and build stronger relationships with stakeholders.
- ix. Governments, research institutions, and businesses should collaborate to fund research and innovation in energy efficiency, waste reduction, and sustainable business practices. Encouraging innovation can lead to the development of new technologies and solutions that further enhance economic and environmental performance.
- x. SMEs should continually review their green management practices, adapting to changing technologies, regulations, and market trends. A commitment to ongoing improvement ensures that the business remains resilient, competitive, and aligned with evolving sustainability expectations.

By embracing these recommendations, SMEs in Rivers State can enhance their sustainable business performance, contribute to environmental preservation, and position themselves for long-term success in a rapidly changing business landscape.

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