

GREEN INNOVATION AND ORGANISATIONAL PERFORMANCE OF SELECTED MANUFACTURING COMPANIES IN NIGERIA

¹Alabi Lukman Abayomi; ²Adelakun Michael Oluwaseyi;
³Oyediran, Ademola Olusayo

¹Department of Business Administration, Oyo State College of Agriculture and Technology, Igboora, Oyo State; ²Bursary Department, Oyo State College of Agriculture and Technology
Igboora, Oyo State; ³Tescom, Oyo State

E-mails: ¹Alabilukman13@gmail.com; ²Michaeladelakun01@gmail.com; ³ademolaolusayo@gmail.com

Phone Nos.: ¹+234 806 272 7860; ²+234 705 965 3832

Abstract

This study investigates the influence of green innovation practices on the performance of selected manufacturing firms in Oyo State, Nigeria. It was motivated by the urgent need to address the environmental challenges linked to industrial activities in developing economies while exploring the potential benefits such practices offer to organisations. Guided by clearly defined objectives, research questions, and hypotheses, the study specifically examined the extent to which green product and process innovations affect productivity and overall organisational outcomes. A survey research design was adopted, with data obtained through structured questionnaires and interviews administered to 456 respondents drawn from a population of 3,400 employees across management, middle, and lower-level staff of 15 manufacturing firms. Stratified and simple random sampling techniques were used for fair representation. Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 22. The findings revealed that green product innovation has a significant positive impact on firm performance, particularly in terms of market share ($\beta = .230$; $t = 4.272$; $p < 0.05$).

Keywords: *Green innovation, Ecopreneurship, Sustainability, Organisational performance, Manufacturing firms.*

How to Cite: Alabi, L. A., Adelakun, M. O., and Oyediran, A. O. (2025). Green innovation and organizational performance of selected manufacturing companies in Nigeria. *OYSCATECH Journal of Management, Economics, and Communication Studies*, 3(1), 32-37. <https://oyscatechpublications.org/>

Introduction

Environmental concerns have become a global priority due to issues such as climate change, deforestation, flooding, and pollution, all of which have severe impacts on human life and economic activities. Businesses, while contributing to social and economic development, also play a significant role in environmental degradation through unsustainable practices. In Nigeria, particularly within the manufacturing sector,

industrial activities such as the release of pollutants, excessive use of fossil fuels, and high energy consumption continue to raise concerns about environmental sustainability and firm profitability (Chen et al., 2018; Bawa et al., 2022).

For example, pharmaceutical and food processing industries have been linked to the release of harmful substances, unsafe waste disposal, and high energy demands, all of which contribute to environmental and health

risks. These practices not only damage ecosystems but also increase operational costs, thereby constraining profitability (Bawa et al., 2022). Such trends underscore the urgent need for manufacturing firms to adopt environmentally friendly practices such as green innovation, which seeks to reduce ecological footprints while improving performance outcomes.

The concept of “green business” has gained global acceptance as a strategic approach to achieving sustainable development. International organisations such as the United Nations and the World Bank, as well as global climate change conventions, consistently advocate for eco-friendly business models as a response to the challenges of resource depletion, pollution, and environmental degradation (World Bank, 1995; International Conference on Climate Change, 2016). In Nigeria, environmental challenges are further compounded by activities of multinational oil companies whose operations have led to oil spills, gas flaring, and deforestation in the Niger Delta, resulting in loss of biodiversity, soil degradation, and reduced productivity of firms and host communities (Opukri & Ibaba, 2008; UNDP, 2006).

Green innovation therefore represents an essential strategy for balancing business growth with ecological responsibility. By adopting cleaner technologies, renewable energy sources, recycling initiatives, and sustainable production processes, firms can reduce costs, improve efficiency, and enhance competitiveness in both local and global markets (McEwen, 2013). Beyond financial benefits, green innovation promotes long-term sustainability, community wellbeing, and compliance with international environmental standards.

Against this background, this study focuses on the effect of green innovation on the organisational performance of selected manufacturing firms in Oyo State, Nigeria. It aims to address the gap in empirical literature by providing evidence on how green process

and product innovations influence firm productivity and competitiveness within a developing economy context.

Statement of the Problem

Manufacturing firms are expected to operate in environments free from contamination in order to ensure product safety and consumer wellbeing (Bawa et al., 2022). However, achieving such standards often requires heavy investments in advanced technologies and equipment, which significantly increase operating costs. In Nigeria, especially within Ibadan Metropolis, most manufacturing companies rely on diesel-powered generators to sustain production due to unreliable electricity supply. While this guarantees operations, it escalates production costs and releases harmful emissions into the atmosphere, thereby worsening environmental degradation and undermining profitability.

Global concerns about climate change and the growing emphasis on sustainable development, particularly through the United Nations’ Sustainable Development Goals (SDGs), have intensified the call for industries to adopt eco-friendly practices. Manufacturing firms, given their direct environmental impact, are under increasing pressure to integrate green innovation into their operations. This includes the use of renewable energy, eco-friendly raw materials, and sustainable production processes that align with international environmental standards (Yam et al., 2019).

Despite this growing global advocacy, many firms in Nigeria remain slow in embracing green innovation due to perceived high costs, lack of awareness, and weak enforcement of environmental regulations. Consequently, their operations continue to harm the environment while also limiting long-term competitiveness and growth. This creates a critical gap in understanding the extent to which green innovation contributes to organisational performance within the Nigerian manufacturing sector.

This study, therefore, seeks to examine the impact of green innovation—both in processes and products—on the performance of selected manufacturing firms in Oyo State, Nigeria.

Research Objectives

1. Examine the relationship between green process innovation and organisational performance.
2. Assess the impact of green product innovation on organisational performance.

Research Questions

1. What is the relationship between green process innovation and organisational performance?
2. How does green product innovation influence organisational performance?

Research Hypotheses

H01: There is no significant relationship between green process innovation and organisational performance.

H02: Green product innovation has no significant impact on organisational performance.

Literature Review

2.1 Conceptual Review of Green Innovation

Green innovation refers to the introduction of environmentally friendly processes, products, and practices that minimise the negative impact of business operations on the ecosystem. It encompasses energy efficiency, waste reduction, use of renewable resources, recycling, and eco-conscious product design (Chukwuka, 2016). Beyond environmental protection, green practices can also reduce production costs, improve resource utilisation, and enhance competitiveness.

The concept is often described through the “Five Rs” framework: Reduce, Reuse, Recycle, Repair, and Rethink (Chukwuka, 2018). In organisational contexts, adopting green practices can enhance employee productivity, reduce operational costs,

improve customer satisfaction, and strengthen corporate reputation (Nollman, 2013).

2.2 Typologies of Green Entrepreneurship (Ecopreneurship)

Scholars distinguish between two orientations of green entrepreneurs:

1. Profit-oriented ecopreneurs, who adopt eco-friendly practices to gain market advantages.
2. Sustainability-oriented ecopreneurs, whose primary focus is solving environmental problems (Taylor & Walley, 2003; Isaak, 2002).

Ecopreneurship can therefore be seen as a continuum, ranging from businesses that consistently integrate environmental sustainability into operations, to those that ignore ecological concerns altogether (OECD, 2011).

2.3 Theoretical Framework: Ecological Modernisation Theory

The Ecological Modernisation Theory (Hajer, 1995; Mol, 1995) provides the theoretical underpinning for this study. It argues that economic growth and environmental sustainability are not mutually exclusive. Instead, capitalist-driven innovation can be harnessed to develop technologies and practices that simultaneously promote industrial development and environmental protection.

According to this perspective, environmental challenges are not only constraints but also drivers of industrial renewal and competitiveness. Entrepreneurs, as agents of change, play a critical role in creating innovative solutions such as clean energy, recycling initiatives, and eco-friendly production systems (Gibbs, 2009).

2.4 Empirical Review

Previous studies have shown positive relationships between green innovation and organisational performance:

Delmas and Pekovic (2012) found that French companies adopting eco-friendly standards

reported higher employee productivity and job satisfaction.

Nollman (2013) revealed that sustainable workplace initiatives increased productivity by 21.4% compared to non-sustainable workplaces.

Russo and Fouts (2014) concluded that environmental sustainability positively influences profitability and economic performance.

Lin and Geng (2013) showed that market demand stimulates green product innovation, which in turn improves firm performance.

Mercyline and Kamande (2014) demonstrated that Kenyan firms adopting eco-efficiency strategies gained both environmental and financial benefits.

Singh and Panackal (2014) highlighted the potential of youth involvement in ecopreneurship to create green jobs and improve community development.

These studies suggest that green innovation enhances competitiveness, profitability, and sustainability. However, there remains a gap in research on how these dynamics operate within developing economies such as Nigeria.

3.0 Methodology

3.1 Research Design

This study adopted a survey research design to collect opinions and data directly from respondents (Offredy & Vickers, 2010).

3.2 Population of the Study

The population comprised employees of five selected manufacturing firms in Oyo State, Nigeria, across management, middle-level, and lower-level cadres.

3.3 Sample Size and Sampling Technique

A sample of 456 respondents was determined from a total population of 3,400 using Cochran's (1977) formula. Stratified and simple random sampling techniques were applied.

3.4 Sources of Data

Primary data were obtained through questionnaires and interviews, while secondary data were gathered from journals, books, and credible online sources.

3.5 Method of Data Analysis

Descriptive statistics and inferential methods (Pearson correlation and linear regression) were used, with SPSS version 22 employed for data analysis.

4.0 Results and Discussion

4.1 Response Rate

Of 543 questionnaires distributed, 528 were returned complete, giving a valid response rate of 97.2%.

4.2 Descriptive Analysis

Findings indicate that most respondents agreed their organisations had adopted green initiatives. For instance, 47.7% strongly agreed and 39.8% agreed, with a mean score of 4.2 (SD = 0.24). Similarly, 49.2% strongly agreed and 34.0% agreed that green practices increased productivity. Other results show positive impacts of individual attitudes, planning, and labour involvement in green practices on productivity.

4.3 Test of Hypotheses

Regression results show a strong positive relationship ($R = 0.756$) between green initiatives and productivity. The R^2 value of 0.571 indicates that 57.1% of productivity variance is explained by green initiatives. The model was statistically significant ($F = 346.024$, $p < 0.05$), leading to the rejection of the null hypotheses.

4.4 Discussion of Findings

The results confirm that green innovation significantly enhances organisational performance. This aligns with Delmas and Pekovic (2012), Nollman (2013), and Russo and Fouts (2014), who found positive links

between sustainability practices and productivity/profitability. In Nigeria, green adoption is shown to improve efficiency, reduce costs, and enhance competitiveness, while addressing environmental concerns.

Conclusion and Recommendations

5.1 Conclusion

The study concludes that green innovation significantly improves organisational performance in Nigerian manufacturing firms. Green practices reduce costs, increase productivity, and support competitiveness while contributing to environmental sustainability.

5.2 Recommendations

1. Government should provide tax incentives, subsidies, and grants for firms adopting green practices.
2. Stronger policies and enforcement mechanisms should ensure compliance with environmental standards.
3. Training programs should be introduced to build employee awareness and competence in sustainability.
4. Ecopreneurship courses should be included in school curricula to promote long-term sustainability culture.
5. Firms should invest in modern, energy-efficient technologies and renewable energy sources.

References

- Abbaszadeh, S., Zagreus, L., Lehrer, D., & Huizenga, C. (2014). Occupant satisfaction with indoor environmental quality in green buildings. US Green Building Council.
- Anderson, T. (1998). Ecopreneurship: Business practices for sustainable development. *Journal of Business Venturing*, 13(1), 23–37.
- Arber, S., & Specht, A. (1992). Innovation and sustainability in entrepreneurship. [Publisher info needed].
- Bawa, M. A., Adewale, O. O., & Yusuf, T. A. (2022). Environmental challenges in Nigerian pharmaceutical firms: Implications for performance. [Journal info needed].
- Beveridge, R., & Guy, S. (2005). The rise of the eco-entrepreneur: Innovation for sustainability. *Journal of Cleaner Production*, 13(6), 615–628.
- Chen, Y., Lai, S., & Wen, C. (2018). The influence of green innovation on corporate sustainability. *Sustainability*, 10(2), 1–14.
- Chukwuka, C. (2016). Green business practices in developing economies. [Journal info needed].
- Chukwuka, C. (2018). The “Five Rs” of sustainability and business innovation. [Journal info needed].
- Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). Wiley.
- Delmas, M. A., & Pekovic, S. (2012). Environmental standards and labour productivity: Understanding the mechanisms that sustain sustainability. *Journal of Organizational Behavior*, 34(2), 230–252.
- Gibbs, D. (2009). Sustainability entrepreneurs, ecopreneurs and the development of a sustainable economy. *Greener Management International*, 55, 63–78.
- Hajer, M. (1995). *The politics of environmental discourse: Ecological modernization and the policy process*. Oxford University Press.
- International Conference on Climate Change and Global Warming. (2016). *Proceedings of the International Conference on Climate Change*. [Publisher info needed].
- Klimova, A., & Zitek, A. (2011). Eco-innovation as a competitive advantage. *International Journal of Sustainable Development*, 9(3), 45–58.
- Lin, H., & Geng, C. (2013). Market demand, green product innovation, and firm performance: Evidence from Vietnam.

- Journal of Cleaner Production, 40(3), 101–110.
- McEwen, T. (2013). Ecopreneurship: A new approach to managing business in a sustainable world. *Journal of Business & Entrepreneurship*, 25(1), 131–150.
- Mercyline, N., & Kamande, E. (2014). Eco-efficiency and eco-commitment in Kenyan manufacturing firms. *African Journal of Business Management*, 8(12), 390–401.
- Mol, A. (1995). The refinement of production: Ecological modernisation theory and the chemical industry. Van Arkel.
- Nollman, M. (2013). Sustainability initiatives and workplace productivity. *Journal of Sustainable Business*, 5(2), 115–129.
- Opukri, C. O., & Ibaba, I. S. (2008). Oil-induced environmental degradation and internal population displacement in the Nigeria's Niger Delta. *Journal of Sustainable Development in Africa*, 10(1), 173–193.
- Oteh, A., & Eze, N. (2012). Environmental constraints and business competitiveness in Nigeria. [Journal info needed].
- Poister, T. H. (2003). Measuring performance in public and nonprofit organizations. Jossey-Bass.
- Russo, M. V., & Fouts, P. A. (2014). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534–559.
- Schaper, M. (2002). The essence of ecopreneurship. *Greener Management International*, 38, 26–30.
- Singh, A., & Panackal, R. (2014). Youth ecopreneurship: A key to sustainable development. *International Journal of Entrepreneurship and Small Business*, 23(4), 512–526.
- UNDP. (2006). Niger Delta human development report. United Nations Development Programme.
- Volery, T. (2002). Ecopreneurship: Rationale, current issues, and future challenges. *Journal of Organizational Change Management*, 15(2), 123–135.
- World Bank. (1995). Nigeria: Industrial pollution abatement in a developing country. World Bank.
- Yam, R., Guan, J., & Pun, K. (2019). Green innovation adoption and organisational performance. *Technological Forecasting and Social Change*, 145, 394–402.