

**RELATIONSHIP BETWEEN DIGITAL GREEN ADVERTISING AND CORPORATE ENVIRONMENTAL RESPONSIBILITY PRACTICES IN THE NIGERIAN MANUFACTURING SECTOR**

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**Abstract**

The study examined the relationship between digital green advertising and corporate environmental responsibility practices in the Nigerian Manufacturing Sector. Specifically, the study investigated the relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector. It also investigated the relationship between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector. Two null hypotheses were tested at 0.05 level of significance. The correlational survey design was adopted for the study. A sample of 210 respondents were selected from 70 registered manufacturing firms using purposive sampling. Data were collected through a structured questionnaire and analysed using Pearson Product-Moment Correlation Coefficient. Findings revealed a significant positive relationship between environmental claims and corporate environmental responsibility practices, and also between transparency and engagement and corporate environmental responsibility practices. The study revealed that digital green advertising, when conducted with sincerity and accountability is positively related to corporate environmental responsibility practices among Nigerian manufacturing enterprises. Based on the findings, recommendations were made for manufacturing firms to strengthen the credibility of their green advertising strategies and adopt transparent stakeholder engagement as a core element of sustainability communication.

**Keywords:** Digital Green Advertising, Environmental Claims, Transparency and Engagement, Corporate Environmental Responsibility, Nigerian Manufacturing Sector

**Introduction**

Global warming, driven by rising greenhouse gas emissions, poses a critical challenge to ecosystems, economies and livelihoods worldwide. International efforts to combat this trend include the Paris Agreement of 2015, which aims to limit global temperature increases to well below 2°C above pre-industrial levels, ideally targeting 1.5°C (United Nations Framework Convention on Climate Change [UNFCCC], 2015). Rogelj *et al.* (2016) stressed the need for nations to enhance their emission reduction commitments through policies like carbon pricing and renewable energy adoption to achieve these targets. Le Quéré *et al.* (2018) advocated for technological innovations, such as carbon capture and storage, to curb emissions effectively. The

United Nations Sustainable Development Goals (SDGs), particularly Goal 13 on climate action, further reinforce these efforts by calling for collective responsibility to mitigate climate change (United Nations, 2015). These global resolutions mandate manufacturing companies to adopt measures to reduce fossil fuel consumption and emissions as part of their corporate social responsibility (CSR), ensuring industrial practices align with global sustainability objectives to combat environmental degradation.

Corporate environmental responsibility (CER) refers to a firm's commitment to minimizing its environmental impact through sustainable practices. Bansal and Song (2017) defined CER as the integration of environmental considerations into business strategies, emphasizing actions like reducing emissions to meet stakeholder expectations. Chen *et al.* (2018) described CER as a voluntary approach where firms adopt eco-friendly practices, such as waste reduction and resource conservation, to enhance environmental performance. Li *et al.* (2020) view CER as encompassing policies that promote sustainability, including energy-efficient production and compliance with environmental regulations. CER is imperative to forestalling the threat of global warming, as it ensures industries contribute to reducing carbon footprints and preserving ecosystems, aligning with global climate goals. However, in Nigeria, manufacturing firms often overlook their CER obligations, exacerbating environmental challenges. For instance, textile industries in Lagos discharge untreated effluents into rivers like the Ogun River, causing water pollution (Oyekanmi *et al.*, 2017). Similarly, cement factories in Ogun State emit high levels of particulate matter, contributing to air quality deterioration (Okeke & Okeke, 2019). These lapses reflect a lack of commitment to sustainable practices, posing risks to public health and the environment.

This poor CER performance is often linked to deceptive advertising and marketing practices in Nigeria's manufacturing sector, where firms prioritize profits over environmental accountability. Some companies engage in greenwashing, falsely promoting environmental friendliness without implementing substantive CER measures. For example, certain beverage firms advertise "eco-friendly" packaging while relying on non-recyclable plastics, contributing to landfill overflow (Eze & Okpala, 2021). Such misleading advertising erodes consumer trust and

undermines genuine environmental efforts, perpetuating harmful production practices (Adebayo & Iweala, 2019). In recent times, scholars have proposed that sustainable measures like digital green advertising could enhance CER among Nigerian manufacturing firms. Digital green advertising involves leveraging online platforms like social media, websites and digital campaigns to promote eco-friendly products, services, or corporate practices that emphasize sustainability (Ogunleye & Omojola, 2020). Unlike traditional advertising, digital green advertising offers cost-effective, scalable and interactive ways to engage stakeholders, enabling firms to showcase verifiable CER efforts, such as energy-efficient processes or waste reduction initiatives (Adeyemi & Salami, 2022). In Nigeria, where internet penetration and social media usage are growing, digital platforms provide opportunities to educate consumers about sustainability, foster brand loyalty and align marketing with environmental responsibility. However, challenges like limited digital literacy, weak regulatory oversight and the risk of greenwashing online persist, necessitating credible and transparent communication to ensure effectiveness (Ogunleye & Omojola, 2020). This study therefore examined the relationship between digital green advertising and corporate environmental responsibility practices in Nigeria's manufacturing sector.

### **Statement of the Problem**

Nigeria's manufacturing sector, a pivotal contributor to the nation's economy, faces significant challenges that undermine its environmental sustainability and alignment with global climate objectives. Encompassing industries such as cement, textiles, food processing, and chemicals, the sector is critical to Nigeria's GDP but is plagued by issues that exacerbate environmental degradation and hinder effective corporate environmental responsibility (CER) practices. These challenges include weak regulatory enforcement, limited adoption of sustainable practices, resource constraints, and misleading advertising practices, particularly greenwashing, which collectively contribute to environmental harm and impede Nigeria's progress toward commitments like the Paris Agreement (United Nations Framework Convention on Climate Change [UNFCCC], 2015). In the South East region of Nigeria, comprising states like Anambra, Enugu, and Imo, these issues are particularly pronounced due to the concentration of manufacturing activities and inadequate environmental oversight. The rise of digital green

advertising offers a potential solution to promote transparency and accountability, yet its application in Nigeria's manufacturing sector, especially in the South East, remains underexplored. This study seeks to address the gap by examining how digital green advertising can enhance CER practices, mitigate environmental challenges, and foster sustainable development in Nigeria's manufacturing sector.

A primary issue affecting Nigeria's manufacturing sector is the widespread neglect of CER, leading to environmentally harmful practices that exacerbate pollution and ecosystem degradation. In the South East, manufacturing activities in states like Anambra and Imo have been linked to significant environmental damage. For instance, palm oil processing industries in Imo State discharge untreated effluents into local rivers, causing water contamination and harm to aquatic ecosystems (Ibe *et al.*, 2016). Similarly, in Anambra State, industrial activities in Onitsha's manufacturing hub have led to soil and water pollution from improper waste disposal by textile and chemical firms (Okonkwo *et al.*, 2018). These practices reflect a broader lack of commitment to sustainable.

### **Purpose of the Study**

The study examined the relationship between digital green advertising and corporate environmental responsibility practices in the Nigerian Manufacturing Sector. Specifically, the study investigated:

1. The relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.
2. The relationship between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.

### **Research Questions**

The following research question guided the study:

1. What is the relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector?
2. What is the relationship between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector?

### Null Hypotheses

The following null hypotheses were tested at level of significance:

1. There is no significant relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.
2. There is no significant relationship between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.

### Theoretical Framework

The stakeholder theory was first propounded by R. Edward Freeman in 1984. The stakeholder theory posits that organizations should prioritize the interests and expectations of all stakeholders; individuals or groups who can affect or are affected by the firm's activities rather than focusing solely on shareholders. Stakeholders include employees, customers, suppliers, communities, government agencies, investors, and environmental groups, among others. The theory argues that by addressing stakeholder concerns, firms can achieve long-term success, enhance their legitimacy, and create shared value (Freeman *et al.*, 2018). In the context of environmental sustainability, the theory suggests that firms adopt practices like CER to respond to stakeholder demands for reduced environmental impact, thereby maintaining trust and competitive advantage. The key tenets of the stakeholder theory, as outlined by Freeman (2015) and further elaborated by scholars like Donaldson and Preston (2015), include:

1. **Stakeholder Identification and Salience:** Firms must identify their stakeholders and assess their salience based on power (ability to influence the firm), legitimacy (validity of their claim), and urgency (time-sensitivity of their demands). For example, environmental NGOs may have high urgency in demanding pollution reduction.
2. **Stakeholder Interests and Relationships:** The theory emphasizes understanding and balancing diverse stakeholder interests, recognizing that stakeholders are interconnected and their relationships influence firm behavior. For instance, consumer demand for eco-friendly products may align with supplier efforts to adopt sustainable practices.

3. **Value Creation for Stakeholders:** Firms should create value for all stakeholders, not just shareholders, by addressing their needs through strategic decisions. This includes adopting sustainable practices to meet environmental expectations.
4. **Normative, Descriptive, and Instrumental Dimensions:** The theory has a normative basis (what firms ought to do), a descriptive aspect (how firms interact with stakeholders), and an instrumental perspective (how stakeholder management leads to better outcomes). For sustainability, the instrumental dimension suggests that addressing stakeholder environmental concerns improves firm performance.
5. **Continuous Engagement:** Firms must engage stakeholders through dialogue and collaboration to understand their expectations and respond effectively. This engagement is critical for aligning business practices with societal goals, such as environmental sustainability.

The stakeholder theory is highly relevant to this study, as it provides a framework to understand how digital green advertising and CER practices in the Nigerian manufacturing sector are influenced by stakeholder pressures and expectations. The theory's focus on balancing diverse stakeholder interests aligns with the study's objective of exploring how digital green advertising communicates environmental commitments to stakeholders while supporting CER practices.

### **Literature Review**

Adepoju and Adeagbo (2025) examined 43 Nigerian manufacturing firms listed on the Nigerian Stock Exchange from 2017 to 2023 using an ex-post facto design. Drawing on secondary data and applying multiple regression analysis, they found that environmental disclosure had a positive and significant impact on financial performance. They conclude that firms prioritizing transparency—especially through frameworks like GRI and SASB—are better positioned to enhance sustainability and profitability. Agweda *et al.* (2023) similarly conducted an ex-post facto study on twelve listed industrial goods firms between 2012 and 2023, analyzing emissions, pollution control, compliance, and grievance disclosures. Using Pearson correlation and panel regression, they showed that each component significantly positively affected market value added. They thus advocate for routine environmental disclosure to cultivate stakeholder trust and

strengthen financial performance. Contrasting with these positive Nigerian findings, Ogunode and Adegbe (2022) also used an ex-post facto design on forty-eight quoted manufacturing firms and discovered that environmental disclosure sometimes had a negative effect on key financial metrics such as ROA, debt-to-asset ratios, and share price. Instead, they found that social disclosure showed stronger positive influences. They conclude that environmental reporting alone may not suffice to drive sustainable performance without broader community engagement. Turning to international evidence, Liu *et al.* (2024) studied Chinese listed firms from 2011 to 2023 to investigate how advertising expenditures affected green innovation outcomes. Using econometric models, they discovered a negative relationship: heavier green advertising spending correlated with fewer green patents. Finally, Tu, *et al.* (2024) surveyed consumer perceptions in China using questionnaires and regression analysis to assess the impact of perceived greenwashing on brand image. They found that consumers who perceived greenwashing significantly downgraded a company's green image, underlining the reputational risks of unsubstantiated green claims

### **Methods**

Correlational survey research design was adopted for the study. This design was particularly suitable because it allowed the researcher to explore naturally occurring relationships between variables without manipulating them. The population of the study comprised all registered manufacturing firms in Nigeria affiliated with the Manufacturers Association of Nigeria (MAN) as of 2025. These firms represent various sub-sectors, including food and beverages, pharmaceuticals, textiles, electronics, and construction materials. From this population, a sample of 210 respondents was drawn using purposive sampling. The sample included three key officers; marketing executives, sustainability managers and corporate affairs personnel from each of the 40 selected manufacturing firms. These categories of staff were chosen due to their involvement in formulating, implementing and monitoring both advertising strategies and environmental responsibility initiatives in their organizations. Data were collected using a structured questionnaire developed by the researcher. The instrument was divided into three sections. The first section gathered demographic data, while the second and third sections addressed digital green advertising and corporate environmental responsibility practices respectively. Items on

environmental claims and transparency/engagement were adapted from existing green marketing scales, while CER practices were aligned with the Global Reporting Initiative (GRI) framework. All items were rated on a five-point Likert scale of Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). The instruments were validated by three scholars in marketing and environmental communication. Their input guided the refinement of the questionnaire for clarity, relevance, and comprehensiveness. A pilot study was carried out on 20 respondents drawn from firms not included in the main study. The reliability of the instrument was tested using Cronbach's Alpha, and the reliability coefficients obtained were 0.82 for environmental claims, 0.86 for transparency and engagement and 0.88 for corporate environmental responsibility practices, indicating a high level of internal consistency. The administration of the questionnaire was carried out both physically and electronically using Google Forms. To improve the response rate, follow-up reminders were sent through emails and phone calls. All responses were kept confidential and participation was entirely voluntary. Out of 210 copies of administered, 193 were returned responded to appropriately and used for the analysis of Data. To test the hypotheses, the Pearson Product-Moment Correlation Coefficient (PPMC) was used at a 0.05 level of significance. In testing the hypotheses, if the p-value obtained from the Pearson correlation analysis was less than the 0.05 level of significance, the null hypothesis was rejected. This indicated a significant relationship. However, if the p-value is greater than 0.05, the null hypothesis was not rejected. This indicated that no significant relationship exists. The analysis was conducted using SPSS version 25.

## **Results**

**Research Question One:** What is the relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector?

**Table 2: Summary of Pearson Correlation on the Relationship between Environmental Claims and Corporate Environmental Responsibility Practices in the Nigerian Manufacturing Sector**

Variables	N	r	Remarks
Environmental Claims	193	0.612	Moderate positive relationship

**CERP**

The result of the Pearson’s correlation (r) presented in Table 2 shows that the correlation between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector was 0.612. This value indicates a moderate positive relationship. This implies that organizations that prioritise environmental claims would experience high improvement in its environmental responsibility practices. This indicates that there is a strong positive relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.

**Research Question Two:** What is the relationship between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector?

**Table 2: Summary of Pearson Correlation on the Relationship between Transparency and Engagement and Corporate Environmental Responsibility Practices in the Nigerian Manufacturing Sector**

Variables	N	r	Remarks
Transparency and Engagement	193	0.695	Strong positive relationship

**CERP**

The result of the Pearson’s correlation (r) presented in Table 2 shows that the correlation between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector was 0.69. This value indicates a strong positive relationship. This implies that organizations that prioritise transparency and engagement would experience moderate improvement in its environmental responsibility practices. This indicates that there is a moderate positive relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.

**Hypothesis One:** There is no significant relationship between environmental claims and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.

**Table 3: Test of Significance of Relationship between Environmental Claims and Corporate Environmental Responsibility Practices in the Nigerian Manufacturing Sector**

Variables	N	R	<i>p-value</i>	Remark
Environmental Claims	193	0.612	0.00	Significant

**CERP**

Data in Table 3 reveals a Pearson correlation coefficient (*r*) of 0.612 and a *p*-value of 0.000, which is less than the significance level of 0.05. This indicates a moderate to strong positive relationship between environmental claims in digital green advertising and corporate environmental responsibility practices in the Nigerian manufacturing sector. Based on the decision rule, the null hypothesis is rejected. Therefore, it is concluded that there is a significant relationship between environmental claims and corporate environmental responsibility practices in the Nigerian Manufacturing Sector.

**Hypothesis Two:** There is no significant relationship between transparency and engagement and cooperate environmental responsibility practices in the Nigerian Manufacturing Sector.

**Table 4: Test of Significance of Relationship between Transparency and Engagement and Corporate Environmental Responsibility Practices in the Nigerian Manufacturing Sector**

Variables	N	<i>r</i>	<i>p-value</i>	Remark
Transparency and Engagement	193	0.695	0.00	Significant

**CERP**

Data in Table 4 shows a Pearson correlation coefficient (*r*) of 0.695 and a *p*-value of 0.000, which is less than the 0.05 level of significance. This indicates a strong positive relationship between transparency and engagement in digital green advertising and corporate environmental responsibility practices among manufacturing firms in Nigeria. Based on the decision rule, the null

hypothesis is rejected. It is therefore concluded that there is a significant relationship between transparency and engagement and corporate environmental responsibility practices in the Nigerian Manufacturing Sector.

### **Discussion**

The finding of the study revealed a significant positive relationship between environmental claims and corporate environmental responsibility practices in the Nigerian manufacturing sector. Two factors could account for this finding. First, as environmental issues continue to gain global attention, many Nigerian manufacturing firms now realize that aligning their advertising with genuine sustainability actions helps them build trust with stakeholders, especially environmentally conscious consumers. Firms that make environmental claims in their digital campaigns often do so not merely for branding, but as a reflection of actual compliance with environmental regulations and internal sustainability policies. Second, the rising use of digital platforms for corporate communication has made it easier for firms to be scrutinized by the public. As a result, companies are more likely to ensure that their environmental advertising is backed by real and measurable environmental practices to avoid accusations of greenwashing and to maintain credibility. This finding is in agreement with Adepoju and Adeagbo (2025) who found that environmental disclosure had a positive and significant impact on financial performance among Nigerian manufacturing firms. Adepoju and Adeagbo (2025) observed that companies that prioritized transparency, especially by adopting international frameworks such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), were more likely to enhance both sustainability and profitability. In the same vein, Agweda *et al.* (2023) reported that firms which consistently disclosed emissions data, pollution control efforts, and environmental compliance practices showed significant improvements in market value added. They stated that routine environmental disclosure builds stakeholder trust and enhances firm competitiveness. Additionally, the finding resonates with broader literature on environmental communication and corporate responsibility. However, this finding contrasts with that of Ogunode and Adegbie (2022) who found that environmental disclosures sometimes had a negative effect on financial performance indicators such as return on assets and share price. They reported that while

environmental reporting may appeal to regulatory and social expectations, it may also increase operational costs or signal risk to certain investors. Ogunode and Adegbe (2022) further opined that social disclosures (community development and employee welfare) were more positively correlated with firm performance than environmental reporting alone. This suggests that while environmental claims can positively influence corporate environmental responsibility practices, their impact may depend on how integrated they are in a broader sustainability framework that includes social dimensions. Furthermore, the finding of this study strengthens the argument that when digital green advertising are genuinely implemented, it can play meaningful role in promoting environmentally responsible behaviour in the manufacturing sector.

The finding of the study revealed that there is a significant relationship between transparency and engagement and corporate environmental responsibility practices in the Nigerian manufacturing sector. Two factors could account for this finding. First, increased transparency in digital green advertising fosters stakeholder confidence, as firms that openly share their environmental goals and progress are more likely to be perceived as credible and responsible. This openness often motivates companies to align their environmental communication with real actions to avoid public backlash. Second, active engagement with stakeholders through interactive platforms, feedback mechanisms and collaborative environmental initiatives can strengthen accountability and drive firms to adopt more sustainable practices, as they are constantly reminded of their environmental promises and the expectations of their audience. This finding contrasts with that of Liu *et al.* (2024) who examined Chinese listed firms over a twelve-year period and discovered that increased spending on green advertising was negatively associated with green innovation outputs. Liu *et al.* (2024) stated that in some contexts, firms may invest in green advertising as a superficial strategy to project environmental concern without committing to genuine sustainability innovations—an indication of greenwashing. This implies that transparency in advertising may not always reflect actual environmental responsibility unless supported by verifiable actions. Similarly, Tu *et al.* (2024) found that consumers who perceived companies as engaging in greenwashing significantly downgraded the companies' green image. Tu *et al.* (2024) highlighted the reputational risks associated with making unsubstantiated or exaggerated

environmental claims, further underscoring the importance of aligning transparency and engagement efforts with authentic corporate environmental practices.

### **Conclusion**

The researcher concludes, based on the findings of the study, that digital green advertising has significant relationships with corporate environmental responsibility practices in the Nigerian manufacturing sector. The finding of the study showed that environmental claims have a significant positive relationship with corporate environmental responsibility practices among manufacturing firms in Nigeria. Similarly, the finding of the study showed that transparency and engagement also have a significant positive relationship with corporate environmental responsibility practices in the Nigerian manufacturing sector. Also, the finding of the study revealed that both environmental claims and transparency and engagement contribute meaningfully to how Nigerian manufacturing firms communicate, implement, and sustain their environmental responsibility initiatives.

### **Recommendations**

Based on the findings of this study, the researcher proffers the following recommendations:

1. Manufacturing firms in Nigeria should strengthen the credibility of their environmental claims by ensuring that such claims in digital advertisements are backed by verifiable environmental practices. This will help build trust among stakeholders and avoid the risks associated with greenwashing.
2. Corporate organizations should invest in transparent communication strategies that involve regular disclosures, interactive stakeholder engagement, and responsiveness to environmental concerns. This will not only enhance their public image but also reinforce their commitment to sustainability.
3. Regulatory agencies such as the National Environmental Standards and Regulations Enforcement Agency (NESREA) should enforce stricter guidelines on environmental advertising, requiring firms to substantiate their claims with evidence of compliance to environmental standards and measurable outcomes.

- Professional bodies and industry associations should organize regular training and workshops for marketing and sustainability professionals in the manufacturing sector, focusing on ethical digital green advertising and its role in advancing corporate environmental responsibility.

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