

# Corporate Commitment to Innovation in Packaging for Sustainability in Nigeria's Manufacturing Sector: Evidence from South West Nigeria

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## Abstract

In response to escalating environmental concerns and regulatory pressures, sustainable packaging has become a strategic priority for manufacturing firms worldwide. Despite this global shift, empirical evidence on how corporate commitment drives packaging innovation for sustainability within Nigeria's manufacturing sector remains limited. This study examines the extent of corporate commitment and its influence on sustainable packaging innovation among manufacturing firms in South West Nigeria, drawing on Stakeholder Theory and the Triple Bottom Line framework. Adopting a quantitative cross-sectional survey design, data were collected from 296 manufacturing firms across Lagos, Ogun, and Oyo States and analysed using descriptive statistics, Pearson correlation, and multiple regression techniques. The results indicate a moderately high level of corporate commitment to sustainability, particularly among large firms, with management support, budget allocation, and procurement alignment emerging as critical enablers. Recyclable materials (72.3%) and design optimization (66.9%) were identified as the most widely adopted packaging innovations. A strong and statistically significant positive relationship was found between corporate commitment and the extent of packaging innovation ( $r = 0.611$ ,  $p < 0.001$ ). These findings suggest that sustained organisational commitment plays a pivotal role in translating sustainability intentions into concrete innovation outcomes, while structural barriers such as high material costs, limited supplier support, and weak regulatory enforcement continue to constrain progress. The study contributes to the environmental management and sustainability literature by providing context-specific empirical evidence from an emerging economy and by demonstrating how internal corporate commitment conditions the effectiveness of sustainability-oriented innovation. Policy implications include the need for enhanced fiscal incentives, strengthened sustainable supply chains, and the institutionalisation of sustainability training within manufacturing firms to support long-term packaging innovation in Nigeria.

## Keywords

Sustainable packaging, corporate commitment, manufacturing sector, Stakeholder Theory, environmental innovation

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## Introduction

In recent decades, the call for environmental sustainability has redefined expectations for corporate responsibility, particularly in the manufacturing sector. Among the most visible and environmentally consequential aspects of manufacturing is packaging, which plays a crucial role in product safety, branding, and logistics but also contributes significantly to global waste streams (Verghese *et al.*, 2012; WBCSD, 2020). In response to increasing environmental awareness, evolving consumer expectations, and stricter regulatory frameworks, many corporations globally have turned their attention to innovating packaging practices to align with sustainability goals. These innovations often include the use of biodegradable materials, reduced packaging volume, improved recyclability, and circular economy strategies (Hopewell, Dvorak & Kosior, 2009; Lindh *et al.*, 2016).

While these trends are well-documented in developed economies, the empirical understanding of how firms in emerging economies particularly Nigeria commit to packaging innovation for sustainability remains limited. In Nigeria's manufacturing sector, which contributes nearly 10% to GDP and is central to employment and industrial growth (National Bureau of Statistics [NBS], 2023), packaging practices remain largely traditional, linear, and cost-driven. Despite the growing discourse around environmental degradation, plastic pollution, and resource scarcity, most Nigerian manufacturers have not yet institutionalised sustainable packaging strategies at scale (Adebayo & Bello, 2021; Iweka & Okonkwo, 2019).

More critically, the existing body of literature on sustainability in Nigeria tends to adopt a broad or generic focus, often examining corporate social responsibility (CSR) holistically or treating sustainability as a high-level strategic intention rather than an operational reality (Eneh, 2011; Ojo, 2015). Few studies have explored packaging specifically as a site of innovation, let alone examined how corporate commitment, organisational policy, and regional dynamics shape sustainable packaging decisions. This gap is especially pronounced in South West Nigeria, which houses some of the country's largest manufacturing clusters, particularly in Lagos, Ogun, and Oyo States yet suffers from acute challenges of plastic pollution and weak recycling infrastructure (Adeyanju & Ojo, 2020).

The lack of focused empirical research on packaging innovation as a dimension of corporate sustainability in Nigeria's manufacturing sector represents a critical gap in both the academic literature and policy discourse. Most prior studies on sustainability in Nigerian industry either generalise corporate environmental responsibility (Okorie & Olanrewaju, 2016) or focus on energy efficiency, pollution control, or CSR reporting (Eneh, 2011; Olowokudejo *et al.*, 2013). The specific role of packaging innovation its drivers, barriers, and relationship to corporate commitment has not been systematically examined, especially in the context of local environmental

conditions, regulatory frameworks, and supply chain dynamics in South West Nigeria.

Globally, research on sustainable packaging has expanded considerably in the past decade. Scholars have examined drivers of packaging innovation, such as consumer awareness, regulatory pressure, and green branding (Lindh *et al.*, 2016; Magnier & Crié, 2015). Studies have also explored the tension between functionality and environmental performance, pointing out that sustainable packaging is not merely a design issue but a strategic and organisational challenge (Pålsson *et al.*, 2017).

In developing countries, however, the literature remains sparse. While some African studies have explored corporate environmental reporting (Agyemang *et al.*, 2014) and green product adoption (Kamau & Ayuo, 2018), packaging rarely receives detailed attention. In Nigeria, most research has focused on waste management, pollution, or corporate philanthropy, with little investigation into how manufacturers engage with packaging as a sustainability vector. A few recent studies (Adebayo & Bello, 2021; Olawale & Garuba, 2020) have called for more focused analyses, but comprehensive data is lacking.

This study extends the literature on sustainable innovation by demonstrating that corporate commitment operates as a pivotal organisational mechanism through which sustainability orientations are converted into tangible packaging innovation outcomes within manufacturing firms. By empirically integrating Stakeholder Theory and the Triple Bottom Line framework, the study advances theoretical understanding of how managerial support, resource allocation, and internal alignment condition the effectiveness of sustainability-driven innovation. Furthermore, the findings reveal that institutional and supply-side constraints, particularly weak regulatory enforcement and limited supplier support, shape the strength of the relationship between corporate commitment and packaging innovation, thereby refining the applicability of sustainability and innovation theories to emerging industrial economies such as Nigeria.

This gap is problematic for several reasons. First, packaging is one of the most immediate ways in which consumers and stakeholders interface with a company's sustainability profile. Second, the transition to sustainable packaging involves multiple organisational layers procurement, design, compliance, and customer engagement thus requiring deliberate corporate commitment beyond token gestures. Third, Nigeria's policy push towards a circular economy (e.g., the National Plastic Waste Management Policy, 2020) demands evidence-based strategies tailored to specific industrial realities. Without targeted research, policymaking and corporate innovation remain reactive and fragmented.

To address this gap, the current study investigates the nature, scope, and implications of corporate commitment to packaging innovation for sustainability in South West Nigeria's manufacturing sector. It seeks to empirically assess whether, how, and to what extent companies are embedding sustainability principles into their packaging strategies.

This study examines the extent to which corporate commitment shapes sustainable packaging innovation among manufacturing firms in South West Nigeria by exploring how sustainability-oriented intentions are translated into concrete packaging practices. It investigates the internal organisational drivers and external institutional influences that condition firms' adoption of innovative and environmentally responsible packaging solutions, while also analysing the structural, financial, and supply-chain barriers that constrain effective implementation. In addition, the study evaluates how packaging innovation contributes to broader corporate sustainability objectives and competitive outcomes within the manufacturing sector, with particular attention to how these dynamics unfold within the regulatory and industrial context of South West Nigeria.

This study makes three important contributions to the literature on sustainability, innovation, and manufacturing in emerging economies. First, it extends Stakeholder Theory by demonstrating that in contexts characterised by weak regulatory enforcement and infrastructural limitations, such as Nigeria, corporate commitment operates as a mediating mechanism that translates stakeholder pressure into substantive sustainability innovation outcomes. Rather than responding uniformly to external pressures, firms with strong internal commitment are better able to prioritise and act upon sustainability demands, particularly in relation to packaging innovation.

Second, the study advances the application of the Triple Bottom Line (TBL) framework by empirically showing how manufacturing firms in Nigeria selectively operationalise sustainability, with stronger emphasis on economic and environmental dimensions and comparatively weaker integration of the social dimension. This finding highlights the contextual limits of TBL implementation in emerging markets and underscores the need for theory-sensitive adaptation rather than universal application. Third, by isolating packaging as a distinct locus of sustainability-driven innovation, the study contributes novel, context-specific empirical evidence from Nigeria's manufacturing sector. In doing so, it moves beyond broad corporate social responsibility and environmental management perspectives, positioning packaging innovation as a strategic organisational capability shaped by leadership commitment, resource allocation, and stakeholder engagement.

## Literature Review

### *Sustainable Packaging Innovation as a Strategic Sustainability Capability*

Sustainable packaging innovation has increasingly been recognised in the literature as a critical component of corporate sustainability strategies, particularly within manufacturing sectors where packaging contributes significantly to environmental degradation. While early studies framed packaging sustainability primarily as a technical or material substitution issue, contemporary scholarship conceptualises it as a strategic organisational capability embedded within broader production, branding, and supply chain systems (Verghese *et al.*, 2012; Pålsson *et al.*, 2017).

From this perspective, sustainable packaging extends beyond the adoption of recyclable or biodegradable materials to encompass design optimisation, material reduction, reuse systems, logistics efficiency, and circular economy integration (García-Arca & Prado-Prado, 2008). These innovations require firms to realign internal processes, coordinate across functional units, and engage external stakeholders, suggesting that packaging innovation is inseparable from organisational structure and strategic intent.

However, much of the empirical literature underpinning this conceptual shift is derived from developed economies characterised by strong regulatory enforcement, advanced recycling infrastructure, and environmentally conscious consumers (Lindh *et al.*, 2016). This raises questions regarding the transferability of such insights to emerging economies, where institutional voids, infrastructural deficits, and cost pressures constrain firms' ability to pursue sustainability-driven innovation (Kamau & Ayuo, 2018). In Nigeria, where manufacturing firms often operate under resource scarcity and volatile regulatory conditions, sustainable packaging innovation cannot be assumed to follow the same pathways observed in Western contexts.

### *Corporate Commitment as a Determinant of Environmental Innovation*

Corporate commitment occupies a central position in environmental innovation literature, functioning as the mechanism through which sustainability intentions are translated into operational outcomes. Commitment is commonly defined as the degree to which sustainability principles are embedded in leadership priorities, formal policies, resource allocation, and organisational routines (Hart, 1995). Empirical evidence consistently demonstrates that environmental initiatives lacking top management support and institutional

backing tend to remain symbolic or compliance-oriented (Delmas & Toffel, 2008).

Within the packaging domain, corporate commitment manifests through deliberate investments in sustainable materials, integration of environmental criteria into procurement decisions, employee training, and long-term supplier collaboration. Firms exhibiting strong commitment are more likely to frame sustainable packaging as a source of competitive advantage and reputational capital rather than as a regulatory burden (Goni *et al.*, 2015). Conversely, weak commitment results in fragmented initiatives that fail to scale or generate meaningful environmental impact.

In developing economies, the role of corporate commitment becomes even more pronounced. Where regulatory enforcement is inconsistent, and market incentives for sustainability are weak, internal organisational drivers often outweigh external pressures in shaping innovation outcomes (Agyemang *et al.*, 2014). Nigerian studies suggest that although awareness of sustainability issues is increasing, implementation remains uneven due to short-term profit orientation, limited technical capacity, and uncertainty surrounding policy enforcement (Adebayo & Bello, 2021; Ukaegbu, 2019). This disconnect underscores the need to empirically examine corporate commitment not merely as an attitudinal construct, but as an operational capability influencing packaging innovation.

### ***Stakeholder Theory and Sustainable Packaging Innovation***

Stakeholder Theory provides a foundational lens for understanding how external pressures influence corporate sustainability behaviour. The theory posits that firms operate within a network of stakeholders whose expectations shape strategic decision-making (Freeman, 1984). In the context of sustainable packaging, key stakeholders include regulators enforcing environmental standards, consumers demanding eco-friendly products, suppliers providing sustainable materials, and communities affected by waste and pollution.

While Stakeholder Theory has been widely applied in sustainability research, critics argue that its application often remains descriptive, focusing on stakeholder identification rather than examining how firms prioritise and respond to competing stakeholder claims. Empirical studies indicate that firms respond selectively to stakeholder pressures based on perceived salience, legitimacy, and enforcement capacity (Delmas & Toffel, 2008). This selective responsiveness is particularly evident in emerging economies, where regulatory institutions may lack enforcement power and consumer environmental activism remains nascent.

In Nigeria's manufacturing sector, regulatory pressure has been identified as a primary driver of environmental action, while relational stakeholder engagement, such as supplier collaboration and consumer education, remains limited (Adeyanju & Ojo, 2020). This suggests that stakeholder influence alone is insufficient to explain sustainable packaging innovation. Instead, corporate

commitment functions as a mediating mechanism that determines whether stakeholder expectations translate into substantive innovation or superficial compliance (Nwabueze & Uduji, 2021). By integrating Stakeholder Theory with an organisational commitment perspective, this study advances a more context-sensitive explanation of packaging innovation behaviour.

Existing sustainability and environmental innovation literature reflects an ongoing debate regarding the primary drivers of corporate innovation. While institutional and stakeholder-based perspectives emphasise the role of regulatory pressure and market expectations in shaping corporate behaviour (Delmas & Toffel, 2008; Lindh *et al.*, 2016), capability-based perspectives argue that internal organisational resources and leadership commitment are more decisive determinants of innovation outcomes (Hart, 1995; Goni *et al.*, 2015). Empirical evidence from developed economies often supports the institutional view, given strong enforcement regimes and mature sustainability markets. However, emerging economy contexts present a more complex picture, where weak institutions and infrastructural deficits limit the effectiveness of external pressures alone (Agyemang *et al.*, 2014; Kamau & Ayuo, 2018). This study contributes to this debate by empirically examining whether corporate commitment can compensate for institutional weaknesses in driving sustainable packaging innovation in Nigeria.

### ***Triple Bottom Line and the Logic of Packaging Innovation***

The Triple Bottom Line (TBL) framework expands the analysis of corporate sustainability by emphasising the simultaneous pursuit of economic, environmental, and social value (Elkington, 1997). Sustainable packaging innovation occupies a strategic intersection within this framework. Economically, packaging affects cost structures, logistics efficiency, and brand differentiation; environmentally, it influences waste generation, recyclability, and resource consumption; socially, it shapes consumer trust and corporate legitimacy.

Prior studies suggest that firms adopting a strong TBL orientation are more likely to invest in sustainability innovations where long-term value creation offsets short-term cost increases (Ghosh & Shah, 2015). Packaging innovation exemplifies this trade-off, as sustainable materials and redesign initiatives often require upfront investment but yield reputational and operational benefits over time (Pålsson *et al.*, 2017).

In developing economies, however, the application of TBL principles is frequently uneven. Research indicates that firms tend to prioritise economic and environmental dimensions while underemphasising social engagement, such as consumer education and employee involvement (Olawale & Garuba,

2020). In Nigeria, sustainability initiatives are often framed instrumentally, focusing on cost reduction and regulatory compliance rather than holistic value creation (Ogunyemi *et al.*, 2022). This selective application of TBL principles highlights the importance of examining how corporate commitment shapes the balance among the three dimensions in practice.

Although the Triple Bottom Line framework has been widely adopted in sustainability research, scholars have increasingly questioned its universal applicability across institutional contexts. Critics argue that TBL assumes relatively balanced institutional support for economic, environmental, and social objectives, an assumption that may not hold in developing economies (Ghosh & Shah, 2015). Empirical studies from African contexts suggest that firms often prioritise economic survival and regulatory compliance over broader social engagement, resulting in selective or partial implementation of TBL principles (Olawale & Garuba, 2020). This raises important questions regarding the extent to which TBL functions as an aspirational ideal rather than an operational reality in contexts such as Nigeria's manufacturing sector.

### ***Drivers and Barriers to Sustainable Packaging Innovation***

The literature identifies a range of drivers influencing sustainable packaging innovation. Regulatory pressure, particularly policies targeting plastic waste and extended producer responsibility, has been shown to significantly shape corporate behaviour across contexts (Lindh *et al.*, 2016). Market-based drivers, including consumer environmental awareness and brand differentiation, also play an important role (Magnier & Crié, 2015).

However, in emerging economies, these drivers are counterbalanced by substantial barriers. High costs of sustainable materials, limited access to reliable suppliers, weak recycling infrastructure, and inconsistent regulatory enforcement constrain firms' innovation capacity (Verghese *et al.*, 2012; Adeyanju & Ojo, 2020). Nigerian studies consistently report a gap between awareness and action, with firms acknowledging the importance of sustainable packaging but struggling to implement it at scale (Adebayo & Bello, 2021).

These findings suggest that external drivers alone cannot account for observed variations in packaging innovation. Instead, internal organisational capabilities, particularly corporate commitment, mediate the impact of external pressures on innovation outcomes. This reinforces the need for empirical models that integrate both institutional and organisational perspectives.

### ***Sustainable Packaging in Nigeria's Manufacturing Context***

Despite the packaging-intensive nature of Nigeria's manufacturing sector, scholarly attention to packaging sustainability remains limited. Existing studies largely focus on corporate social responsibility, waste management, or environmental disclosure, treating packaging as a peripheral issue rather than as a strategic innovation domain (Eneh, 2011; Okorie & Olanrewaju, 2016).

Where packaging is addressed, it is often framed as a waste management challenge rather than an organisational capability shaped by leadership commitment and strategic priorities (Olowokudejo *et al.*, 2013). Recent studies have begun to call for more focused analyses of packaging innovation, particularly within specific industrial and regional contexts (Adebayo & Bello, 2021; Olawale & Garuba, 2020). However, comprehensive empirical evidence remains scarce, especially in South West Nigeria, which hosts the country's largest manufacturing clusters and faces acute plastic pollution challenges (Adeyanju & Ojo, 2020).

The Nigerian manufacturing context offers a theoretically significant setting for examining sustainability innovation. Characterised by weak regulatory enforcement, infrastructural constraints, and high cost sensitivity, Nigeria challenges dominant assumptions within sustainability literature that external pressure and market incentives are sufficient to drive innovation. As such, evidence from this context enables a critical examination of whether prevailing sustainability theories—largely developed in Western economies—adequately explain firm behaviour under conditions of institutional fragility (Ukaegbu, 2019; Nwabueze & Uduji, 2021). By situating sustainable packaging innovation within this environment, the study positions Nigeria not merely as an under-researched setting but as a context that tests and refines existing theoretical claims.

## Summary of Literature and Research Gap

The reviewed literature reveals three critical gaps. First, sustainability research in Nigerian manufacturing remains broad, with limited focus on packaging as a strategic site of innovation. Second, empirical studies examining the relationship between corporate commitment and sustainable packaging innovation are scarce, particularly within region-specific contexts. Third, while Stakeholder Theory and the Triple Bottom Line framework are frequently cited, they are rarely operationalised in a manner that explains how organisational commitment mediates sustainability outcomes in emerging economies.

This study addresses these gaps by empirically examining how corporate commitment influences sustainable packaging innovation among manufacturing firms in South West Nigeria. By grounding the analysis in Stakeholder Theory and the TBL framework, and by focusing on packaging as a distinct innovation capability, the study contributes theoretically and empirically to the environmental innovation literature in emerging market contexts.

Drawing on Stakeholder Theory and the Triple Bottom Line framework, this study operationalises corporate commitment as a multidimensional construct reflecting the degree to which sustainability principles are embedded within organisational strategy and routines. Consistent with Stakeholder Theory, corporate commitment captures managerial responsiveness to stakeholder expectations through leadership support, policy formalisation, and procurement alignment (Freeman, 1984; Delmas & Toffel, 2008).

From a Triple Bottom Line perspective, sustainable packaging innovation represents an outcome variable reflecting firms' efforts to balance economic efficiency, environmental responsibility, and social legitimacy through packaging-related decisions (Elkington, 1997; Pålsson *et al.*, 2017). The selected indicators of packaging innovation, such as recyclable material use, design optimisation, and supplier collaboration thus directly reflect the environmental and economic dimensions of sustainability most salient in the Nigerian manufacturing context.

In synthesising these strands of literature, it becomes evident that sustainable packaging innovation cannot be adequately explained by institutional or stakeholder pressures alone, particularly in emerging economies. Rather, the interaction between external pressures and internal corporate commitment remains underexplored, especially within packaging-intensive manufacturing sectors. This study addresses this gap by integrating stakeholder-based and capability-oriented perspectives to examine how corporate commitment shapes sustainable packaging innovation outcomes in South West Nigeria.

## Methodology

This study adopted a quantitative cross-sectional survey design to examine corporate commitment to innovation in packaging for sustainability among manufacturing firms in South West Nigeria. The quantitative approach was appropriate for generating standardized and generalizable data across firms and for statistically examining relationships between corporate commitment and sustainable packaging innovation. The study focused on manufacturing firms operating in Lagos, Ogun, and Oyo States, selected due to their high concentration of industrial activity. The target population comprised registered manufacturing firms across key sub-sectors, including food and beverages, plastics and packaging, pharmaceuticals, and household products. Using a multi-stage sampling procedure combining purposive selection of states, stratification by industry sub-sector, and simple random sampling, 370 firms were targeted, with 296 valid responses retained for analysis.

Data were collected using a structured questionnaire administered to knowledgeable organizational respondents, including sustainability managers, production managers, packaging managers, and senior executives. The instrument captured information on firm characteristics, corporate commitment to sustainability, sustainable packaging innovation practices, drivers and

barriers, and perceived outcomes. All measurement items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was pretested to ensure clarity and reliability, and internal consistency was confirmed using Cronbach's alpha, with values ranging from 0.74 to 0.88, indicating acceptable reliability.

The measurement items used in this study were theoretically informed by prior sustainability and environmental innovation research. Corporate commitment was measured using indicators capturing top management support, budget allocation, staff training, and integration of sustainability into procurement decisions. These dimensions reflect the organisational embedding of sustainability emphasised in both Stakeholder Theory and the natural resourcebased view, where leadership commitment and resource allocation are necessary conditions for environmental innovation (Hart, 1995; Goni *et al.*, 2015).

Sustainable packaging innovation was operationalised through observable practices reflecting material choice, design optimisation, reuse, and supply chain collaboration. These indicators align with extant conceptualisations of packaging innovation as a strategic capability rather than a single technological change (Verghese *et al.*, 2012; García-Arca & Prado-Prado, 2008).

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS), version 24. Descriptive statistics were employed to summarize firm characteristics and patterns of packaging innovation. Inferential analyses included Pearson correlation and multiple regression to examine the relationship between corporate commitment variables and sustainable packaging innovation outcomes. Statistical significance was assessed at the 5% level. Ethical considerations were observed through informed consent, confidentiality assurances, and anonymity of responses. While the cross-sectional design and reliance on self-reported data may introduce limitations such as response bias, the methodological approach provides a robust basis for analyzing corporate sustainability practices within the study context. The analytical techniques employed in this study were selected to align with the study's theory-driven objectives. Descriptive statistics were used to assess the extent of corporate commitment and the prevalence of sustainable packaging practices, addressing the study's exploratory objectives. Pearson correlation analysis examined the strength and direction of the relationship between corporate commitment and packaging innovation, consistent with theoretical expectations derived from Stakeholder Theory.

Multiple regression analysis was subsequently applied to assess the predictive influence of specific corporate commitment dimensions on packaging innovation outcomes. This approach enabled the study to evaluate

the relative contribution of leadership support, resource allocation, and organisational integration in shaping innovation performance, thereby empirically testing the central theoretical proposition that internal commitment mediates sustainability outcomes in emerging economies.

## Results

A total of 296 valid responses from manufacturing firms operating in South West Nigeria were analysed. The firms were drawn from Lagos (44.6%), Ogun (30.7%), and Oyo (24.7%) States, reflecting the industrial concentration within the region. With respect to firm size, 24.3% were small firms (10–49 employees), 36.8% were medium-sized firms (50–249 employees), and 38.9% were large firms (250 employees and above), indicating a balanced representation across organizational scales (see Table 1).

In terms of industry sub-sector, food and beverages accounted for the largest share of respondents (31.4%), followed by plastics and packaging (26.4%), pharmaceuticals (18.9%), and personal and household products (14.2%). Over half of the firms (50.7%) had been in operation for more than ten years, suggesting a mature industrial base. Respondents were predominantly production managers (30.7%), sustainability or CSR managers (26.0%), packaging managers (23.0%), and senior management staff (20.3%), indicating that the data were obtained from personnel with direct knowledge of packaging and sustainability practices (see Table 1).

## Demographic and Organizational Characteristics of Respondents

A total of 296 valid responses were analysed.

**Table 1: Demographic and Organizational Characteristics (n = 296)**

Variable	Category	Frequency	Percentage (%)
State	Lagos	132	44.6
	Ogun	91	30.7
	Oyo	73	24.7
Firm Size	Small (10–49 employees)	72	24.3
	Medium (50–249 employees)	109	36.8
	Large (250+ employees)	115	38.9
Industry Sub-sector	Food & Beverages	93	31.4
	Plastics & Packaging	78	26.4
	Pharmaceuticals	56	18.9
	Personal & Household Products	42	14.2
	Others	27	9.1
Years in Operation	Less than 5 years	39	13.2
	5–10 years	107	36.1
	Above 10 years	150	50.7

Variable	Category	Frequency	Percentage (%)
Position of Respondent	Production Manager	91	30.7
	Sustainability/CSR Mgr	77	26.0
	Packaging Manager	68	23.0
	Top Management	60	20.3

**Source:** Author Compilation (2025)

### *Corporate Commitment to Sustainability*

Respondents were asked to rate statements relating to corporate commitment to sustainability in packaging using a 5-point Likert scale.

**Table 2: Corporate Commitment to Sustainability**

Item	Mean	Std. Dev
The organization has a formal sustainability policy.	3.82	0.97
Top management actively supports sustainable packaging initiatives.	4.01	0.89
Dedicated budgets are allocated to sustainable packaging.	3.56	1.08
Staff are regularly trained on sustainability practices.	3.47	1.12
Sustainability is integrated into procurement decisions.	3.74	0.92

**Source:** Author Compilation (2025)

The level of corporate commitment to sustainability in packaging was assessed using five indicators measured on a five-point Likert scale. As presented in Table 2, the results indicate a moderate to high level of commitment across the sampled firms. The highest-rated item was top management support for sustainable packaging initiatives ( $M = 4.01$ ,  $SD = 0.89$ ), suggesting strong leadership endorsement.

The existence of formal sustainability policies also recorded a relatively high mean score ( $M = 3.82$ ,  $SD = 0.97$ ), indicating institutional recognition of sustainability within many firms. Integration of sustainability considerations into procurement decisions followed closely ( $M = 3.74$ ,  $SD = 0.92$ ). However, comparatively lower mean scores were observed for staff training on sustainability practices ( $M = 3.47$ ,  $SD = 1.12$ ) and budget allocation for sustainable packaging ( $M = 3.56$ ,  $SD = 1.08$ ), suggesting gaps between strategic intent and operational execution.

### ***Adoption of Sustainable Packaging Innovations***

Table 3 presents the extent to which manufacturing firms have adopted specific sustainable packaging practices. Respondents were asked to indicate the extent of adoption of specific sustainable packaging practices. We observe that the most widely adopted practice was the use of recyclable packaging materials, reported by 72.3% of respondents. Packaging design optimization aimed at reducing material usage was also common, with 66.9% of firms indicating adoption.

**Table 3: Adoption of Sustainable Packaging Innovations**

<b>Packaging Innovation Practice</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Use of recyclable packaging materials	214	72.3
Use of biodegradable materials	126	42.6
Packaging design to minimize material usage	198	66.9
Reuse of packaging materials	143	48.3
Supplier collaboration on sustainable materials	102	34.5
Product labelling for recyclability	118	39.9

**Source:** Author Compilation (2025)

In contrast, fewer firms reported using biodegradable materials (42.6%) and reusing packaging materials (48.3%). Collaboration with suppliers on sustainable packaging materials was notably limited, with only 34.5% of firms reporting such engagement. Similarly, the use of product labeling to communicate recyclability information to consumers was reported by 39.9% of firms. These results indicate that while basic forms of packaging innovation are relatively widespread, more advanced or collaborative sustainability practices remain less prevalent.

### ***Drivers of Packaging Innovation***

Respondents identified key factors influencing their adoption of sustainable packaging innovations.

Figure 1: Key Drivers of Packaging Innovation (Multiple Response)  
(Values shown in % of respondents selecting each driver)

- Regulatory pressure – 64.5%
- Consumer demand – 52.7%
- Cost reduction – 47.3%
- Corporate branding – 45.9%
- Industry competition – 39.2%
- Supplier availability – 28.7%

Respondents identified multiple factors influencing their adoption of sustainable packaging practices (Figure 1). Regulatory pressure emerged as the most influential driver, cited by 64.5% of firms. Consumer demand for environmentally responsible products was the second most frequently reported driver (52.7%), followed by cost reduction opportunities (47.3%) and corporate branding considerations (45.9%).

Industry competition was reported by 39.2% of respondents, while supplier availability was the least cited driver (28.7%). These findings suggest that external institutional and market pressures play a more prominent role in motivating packaging innovation than supply-side capabilities.

### ***Barriers to Sustainable Packaging***

Respondents were asked to rank perceived barriers. Table 4 presents the mean values.

**Table 4: Barriers to Sustainable Packaging Innovation**

Barrier	Mean	Std. Dev
High cost of sustainable materials	4.21	0.84
Limited access to reliable suppliers	3.87	0.96
Lack of technical knowledge	3.66	1.01
Inadequate government incentives	4.05	0.91
Consumer reluctance to accept new packaging formats	3.48	1.06

**Source:** Author Compilation (2025)

The perceived barriers to sustainable packaging innovation are summarized in Table 4. High cost of sustainable materials was identified as the most significant barrier ( $M = 4.21$ ,  $SD = 0.84$ ), followed by inadequate government incentives ( $M = 4.05$ ,  $SD = 0.91$ ). Limited access to reliable suppliers also posed a considerable challenge ( $M = 3.87$ ,  $SD = 0.96$ ).

Other barriers included lack of technical knowledge ( $M = 3.66$ ,  $SD = 1.01$ ) and consumer reluctance to accept new packaging formats ( $M = 3.48$ ,  $SD = 1.06$ ). Overall, the results indicate that financial and institutional constraints represent the most critical obstacles to the adoption of sustainable packaging innovations.

### ***Relationship between Corporate Commitment and Innovation Outcomes***

A Pearson correlation test was run to assess the strength of the relationship between corporate commitment (independent variable) and the extent of packaging innovation (dependent variable).

**Table 5: Correlation between Corporate Commitment and Packaging Innovation**

Variables	r	p-value
Corporate Commitment vs Innovation Level	0.611	0.000

**Source:** Author Compilation (2025)

To examine the relationship between corporate commitment and sustainable packaging innovation, a Pearson correlation analysis was conducted. As shown in Table 5, a strong and positive correlation was found between corporate commitment and the level of packaging innovation ( $r = 0.611$ ,  $p < 0.001$ ). This indicates that firms with higher levels of commitment to sustainability are more likely to adopt innovative packaging practices.

### **Regression Analysis**

A multiple regression analysis was conducted to assess how well corporate commitment components predict sustainable packaging innovation.

**Table 6: Regression Model Summary**

Model Component	Beta	t-value	Sig.
Management Support	0.376	5.49	0.000
Budget Allocation	0.255	4.12	0.000
Staff Training	0.196	3.31	0.001
Integration into Procurement	0.144	2.76	0.006
Constant (Intercept)	—	1.42	0.158

**Source:** Author Compilation (2025)

The model had  $R^2 = 0.47$ , indicating that 47% of the variation in packaging innovation is explained by corporate commitment variables.

A multiple regression analysis was performed to assess the predictive influence of specific corporate commitment components on sustainable packaging innovation (Table 6). The model explained 47% of the variance in packaging innovation outcomes ( $R^2 = 0.47$ ), indicating substantial explanatory power.

Top management support emerged as the strongest predictor ( $\beta = 0.376$ ,  $t = 5.49$ ,  $p < 0.001$ ), followed by budget allocation for sustainable packaging ( $\beta = 0.255$ ,  $t = 4.12$ ,  $p < 0.001$ ). Staff training ( $\beta = 0.196$ ,  $t = 3.31$ ,  $p = 0.001$ ) and integration of sustainability into procurement decisions ( $\beta = 0.144$ ,  $t = 2.76$ ,  $p = 0.006$ ) were also statistically significant predictors. These results demonstrate that internal organizational factors play a critical role in shaping sustainable packaging innovation outcomes.

## **Discussion**

### **Interpretation of Key Empirical Findings**

This study set out to examine the extent to which corporate commitment influences innovation in packaging for sustainability within Nigeria's manufacturing sector. The findings provide strong empirical evidence that corporate commitment is a critical driver of sustainable packaging innovation. The observed moderate-to-high levels of management support, formal sustainability policies, and procurement integration indicate that sustainability is increasingly recognised as a strategic concern rather than a peripheral obligation among manufacturing firms in South West Nigeria.

However, the uneven distribution of commitment across operational dimensions, particularly in staff training and budget allocation, suggests that sustainability engagement remains selective rather than fully institutionalized. This finding implies that while sustainability discourse has penetrated strategic rhetoric, its translation into operational routines is still evolving. The strong correlation and regression results further confirm that commitment is not merely symbolic; where leadership support and resources are present, measurable innovation outcomes follow.

### ***Corporate Commitment and Sustainable Packaging Innovation***

The statistically significant positive relationship between corporate commitment and packaging innovation reinforces the argument that environmental innovation is fundamentally an organizational and strategic phenomenon. Management support emerged as the strongest predictor of innovation, underscoring the centrality of leadership in shaping sustainability trajectories. This finding aligns with earlier studies that emphasize the role of top management commitment in embedding sustainability into core business processes (Delmas & Toffel, 2008; Goni *et al.*, 2015).

The significance of budget allocation and staff training further demonstrates that commitment must be backed by tangible resources and capability development to produce meaningful outcomes. Firms that allocate

financial and human capital toward sustainability are better positioned to experiment with recyclable materials, redesign packaging, and collaborate with suppliers. This supports the view that sustainable packaging innovation is cumulative and capability-driven, rather than a one-off compliance exercise.

### ***Discussion in Light of Stakeholder Theory***

From a Stakeholder Theory perspective, the findings suggest that Nigerian manufacturing firms are increasingly responsive to external stakeholder pressures, particularly regulatory agencies and consumers. Regulatory pressure emerged as the most influential driver of packaging innovation, indicating that compliance considerations remain a dominant motivator in an environment characterised by weak voluntary sustainability norms.

At the same time, the relatively low levels of supplier collaboration and consumer-facing sustainability communication point to partial stakeholder engagement. Firms appear more responsive to coercive pressures than to relational or normative stakeholder expectations. This selective engagement reflects the institutional realities of emerging economies, where regulatory enforcement is uneven, and market incentives for sustainability are still developing. The findings, therefore, extend Stakeholder Theory by illustrating how stakeholder salience is shaped by contextual constraints, rather than assumed to be uniform across settings.

### ***Implications for the Triple Bottom Line Framework***

The results also provide nuanced insights into the application of the Triple Bottom Line (TBL) framework in the Nigerian manufacturing context. While firms demonstrate growing attention to environmental outcomes such as waste reduction and recyclability, the social dimension of sustainability appears less developed. Limited investment in consumer education, eco-labelling, and employee engagement suggests that sustainability efforts are primarily framed through economic and environmental lenses.

This pattern supports prior observations that sustainability in emerging markets tends to be instrumental and efficiency-oriented, rather than holistic or transformative. Nevertheless, the strong influence of corporate commitment variables indicates that firms with a more integrated TBL orientation are better able to align economic performance with environmental responsibility. The findings, therefore, affirm the relevance of the TBL framework, while highlighting the need for contextual adaptation when applying it in developing economies.

### ***Comparison with Previous Empirical Studies***

While the findings align with prior Nigerian studies that report high awareness but limited implementation of sustainability practices (Adebayo & Bello, 2021;

Olawale & Garuba, 2020), this study extends existing knowledge by quantitatively demonstrating that internal corporate commitment explains a substantial proportion of variation in packaging innovation outcomes. In contrast to studies conducted in developed economies where regulatory enforcement and consumer pressure dominate innovation drivers (Lindh *et al.*, 2016), the Nigerian evidence suggests a greater reliance on internal organisational mechanisms. This divergence underscores the contextual contingency of sustainability innovation pathways and cautions against the uncritical generalisation of findings across institutional environments.

### **Practical Implications for Managers and Policymakers**

The findings have several important practical implications. For managers, the results underscore the necessity of moving beyond symbolic sustainability commitments toward deeper institutionalization. Establishing formal policies is insufficient unless accompanied by dedicated budgets, employee training, and integration of sustainability criteria into procurement and supplier management.

For policymakers, the dominance of regulatory pressure as a driver of innovation highlights the importance of consistent enforcement and incentive structures. Strengthening fiscal incentives, supporting local suppliers of sustainable materials, and promoting industry-wide standards could significantly lower the barriers to adoption. Public-private partnerships and targeted capacity-building initiatives may also help bridge technical and financial gaps, particularly for small and medium-sized manufacturers.

### **Contribution to Theory and Knowledge**

This study contributes to theory by reframing corporate commitment as a central organisational mechanism that compensates for institutional weaknesses in emerging economies. While prior sustainability research often assumes that regulatory enforcement and market incentives are sufficient to drive environmental innovation, the findings of this study demonstrate that such assumptions are not always valid in contexts like Nigeria. Instead, internal corporate commitment manifested through leadership support, budget allocation, staff training, and procurement integration plays a decisive role in enabling sustainable packaging innovation.

In extending Stakeholder Theory, the study shows that stakeholder pressure alone does not guarantee sustainability innovation. Rather, the ability of firms to convert stakeholder expectations into tangible outcomes depends on the strength of internal organisational commitment. This insight refines existing

theoretical assumptions by introducing commitment as a mediating construct between external pressure and innovation performance.

Furthermore, the study contributes to Triple Bottom Line scholarship by highlighting the uneven operationalisation of sustainability dimensions in developing economies. The empirical evidence suggests that Nigerian manufacturing firms prioritise economic and environmental objectives while underinvesting in the social dimension of sustainability, such as consumer education and employee engagement. This selective adoption challenges the normative completeness of the TBL framework and calls for more context-sensitive theoretical interpretations.

## **Conclusion**

The empirical findings of this study are interpreted through the combined lenses of Stakeholder Theory and the Triple Bottom Line framework. The strong association between corporate commitment and sustainable packaging innovation supports the theoretical proposition that organisational commitment is a prerequisite for translating stakeholder pressure into substantive environmental innovation. The differential effects of commitment components further suggest that leadership-driven and resource-backed forms of commitment exert greater influence on innovation outcomes than symbolic or policy-level actions alone.

This study investigated the extent, drivers, and challenges of corporate commitment to packaging innovation for sustainability within Nigeria's manufacturing sector, using evidence from firms in South West Nigeria. Grounded in Stakeholder Theory and the Triple Bottom Line (TBL) framework, and based on a quantitative analysis of 296 manufacturing firms, the research has produced important insights into how sustainability principles are or are not being embedded into packaging strategies in an emerging market context.

Beyond its empirical findings, this study contributes to knowledge by demonstrating that sustainable packaging innovation in emerging economies is fundamentally an organisational and strategic challenge rather than a purely technical or regulatory one. By empirically establishing corporate commitment as a critical enabler of innovation under conditions of institutional constraint, the study extends sustainability and innovation theory in a manner that is both contextually grounded and theoretically informative.

The findings confirm that corporate commitment is a significant predictor of sustainable packaging innovation. Companies with active top management support, dedicated sustainability budgets, and formal policies are more likely to adopt innovative packaging practices such as the use of recyclable and biodegradable materials, packaging design optimization, and reuse systems. However, the study also reveals critical barriers, including high costs, lack of technical expertise, and limited supplier infrastructure. Despite high levels of

awareness, implementation remains uneven and often constrained by structural and contextual limitations.

Importantly, while external pressures such as regulatory compliance and consumer demand act as drivers of innovation, internal organizational capabilities and leadership commitment are the primary enablers of effective action. Yet many firms continue to operate with short-term cost priorities, lacking the strategic vision, stakeholder integration, or long-term planning needed to advance comprehensive packaging innovation. This study contributes to theory by empirically validating that Stakeholder Theory and TBL principles are applicable in Nigeria's industrial context, though with important nuances. It adds to the limited body of African-centered scholarship on environmental innovation, especially in the understudied area of packaging.

From a policy standpoint, the findings call for stronger regulatory enforcement, targeted fiscal incentives, and enhanced public-private partnerships to address supply chain and knowledge gaps. Practically, firms are encouraged to institutionalize sustainability by integrating it into procurement, training, and product design functions.

In conclusion, while corporate commitment to packaging innovation for sustainability is emerging in South West Nigeria's manufacturing sector, it remains at a formative stage. Strengthening internal capacity, aligning stakeholder interests, and building enabling ecosystems are essential for translating strategic commitment into measurable environmental outcomes.

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