

Relationship between Green Product Packaging and Organizational Performance in Kenya: Empirical Review

Moses Kamau Kariuki and Dr. Beatrice Jemaiyo

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Abstract: *This study aims to explore the relationship between green product packaging and organizational performance by conducting an empirical review. It seeks to draw comparisons between the advancements made in developed nations and the progress observed in developing economies, shedding light on the varying dynamics and outcomes across these contexts. The paper applies a desktop research design that reviews the empirical literature relating green product packaging to organizational performance. The empirical review is therefore carried out on the Google Scholar platform. Boolean operators "AND" and "OR" are used in searching for the reviewed articles published between January 2020 and July 2024. The keywords are searched and used in relation to Boolean operators. This contribution shall therefore be a novelty to the theory, practice, and policy that may enable an organization to offer solutions on issues related to green product packaging and organizational performance in sub-Saharan Africa.*

Key Words: green, product, packaging, organizational performance

INTRODUCTION

There is increasing global attention focusing on environmental sustainability by minimizing environmental footprint hence positively contributing to societal well-being. The United Nations (UN) has been involved in marketing to promote sustainable production and consumption (Lim, 2022). In particular, the Vision 2030 agenda of promotion of sustainable production and consumption is embedded in the twelfth Sustainable Development Goals (SDGs) that strive to realize a sustainable world.

This is to say that, global environmental issues awareness is prompting countries and organizations to reconsider their production and consumption practices. For instance, Thailand has developed a national roadmap for sustainable consumption and production and implemented green product

packaging strategies (Mungkung et al., 2021). Also, the European Union (EU) has introduced regulations that promote recycling and reducing plastic waste (Chioatto & Sospiro, 2023). Similarly, the United States, together with other developed countries, has set a target on the increase in recyclability of packaging materials together with the reduction of single-use plastics. Fogt Jacobsen et al., (2022)

Green packaging is being increasingly inculcated into the packaging of goods by nations in Africa to concur with the SDGs for fulfilling regulatory requirements and appeal to growing consumer demand. Amoako et al., 2022. According to research conducted in Limpopo South Africa, there are associations between green marketing practices and the performance of SMEs (Masocha, 2021). In Sub-Saharan Africa, Kenya has not been left behind. An example is how the food and beverage manufacturing firms in Kenya are responding to consumer demands by adopting green product packaging (Nderitu, 2024).

The paper deals particularly with green product packaging as a means of achieving sustainable production and consumption to reduce environmental pollution caused by packaging waste. In this study, green product packaging is defined as a use of sustainable materials and processes in packaging to reduce environmental impact (Wandosell et al., 2021). According to Wandosell et al. (2021), "green product packaging" is also called "green packaging", "eco-green packaging", "eco-packaging", "eco-friendly packaging", "sustainable packaging" or "recyclable packaging".

Therefore, green product packaging focuses on the promotion of sustainability in the life cycle of a product as a way of minimizing environmental impacts as indicated by Omayio et al., 2021. This study aims to establish the relationship between green product packaging and organizational performance based on empirical review.

Green product packaging materials included in this study are biodegradable plastics, recycled paper, and plant-based alternatives. Biodegradable plastics are those that decompose naturally over time (Moshood et al., 2022). Recycled paper refers to quality reuse (Tonini et al., 2022) of paper to reproduce eco-friendly packaging materials. Plant-based alternatives makes use of renewable plant materials (Baneshi et al., 2024) such as protein, cellophane, corn, bamboo and sisal to develop smart eco-packaging technologies that consider minimizing environmental impacts.

In this study, packaging design refers to the use of sustainable packaging design, reduction in packaging materials, and the ability for recyclability as part of a packaging design strategy that leads to greater eco-efficiency. Sustainable packaging design is viewed as packaging invention and innovation strategies that incorporate socio-environmental concerns (Zeng et al., 2020). Incorporation of reduction in packaging materials into packaging design can ease economic packaging costs as well as environmental impacts (Escursell et al., 2021). The ability to reuse materials during the eco-packaging design has been noted to be called recyclability (Bauer et al.,

2021). It is important to adopt relevant packaging practices that will lead to environmental sustainability.

In this study, green packaging practices entail the use of biodegradable plastics, recycled paper, plant-based alternatives, and reduction of packaging materials with the key aim of reducing environmental pollution. Eco-friendly packaging practices can be adhered to in the whole product life cycle, from production to consumption, and at all levels of the supply chain (Murtas et al., 2022) in order to curb environmental pollution. Globally and locally, regulations are enacted to foresee adoption of green packaging practices. For instance America, Britain, Australia China, India, South Korea and Japan enact continually sustenance food packaging legislation s. According to Thapliyal et al., 2024 enactment of rules, laws policies, and regulations can cut packaging wastages and spur the development of green product packaging.

Statement of the Problem

There has been a global growing concern on environmental sustainability across industries that has led to instigation of action-oriented worldwide climate change summits (Chan et al., 2022). This growing concern is prompting organizations to rethink their product packaging strategies (Wandosell et al., 2021). In this regard, green product packaging embraces use of ecofriendly materials and recycling so as to reduce environmental impact throughout products lifecycle (Coelho et al., 2020).

To begin with, there is a global waste management challenge, whereby, plastic packages that were emitted in 2016 range from 13 to 25 metric tons and the emission is estimated to double by 2025 (MacLeod et al., 2021). This means that the rate of accumulation of plastic packages in the environment exceeds the rate of degradation. As a result, there is a global need for adoption of biodegradable plastic packaging to combat environmental pollution.

This is one of the important initiatives that countries and organizations attempt to implement to align with SDGs. Precisely, SDGs numbered 12.5 requires organizations, as recorded by United Nations Environmental Program (UNEP), to substantially reduce waste generation through prevention, reduction, recycling and reuse (Ghafari, 2022). Because of this, adopting green product packaging in relationship to organizational performance remains an area requiring thorough research.

Also, developing nations are facing an acute problem of recycling wastes including paper and plastic (Kumari & Raghubanshi, 2023). By recycling paper and plastic into biodegradable reusable green product packaging, then, there would be waste generation reduction and prevention hence curbing environmental pollution.

Notably, there is evidence showing that green product packaging can improve brand reputation and consumer loyalty (Boz et al., 2020) to market competitiveness. However, few empirical studies have examined its relationship with overall organizational success.

In Kenya, the transition to green packaging of products poses challenges to any organization that wants to maximize organizational performance and comply with the principles of SDG. Furthermore, Weg identifies that the high initial capital and availability of materials in green product packaging solutions makes it difficult for most of the organizations in Kenya (2021).

There is a gap of consumer awareness in Kenya regarding the benefits of green product packaging which hinders market demand and market acceptance of sustainable packaging solutions (Omayio et al., 2021). In addition, without creating adequate consumer awareness of benefits of green product packaging then the consumption of green product packaging will remain sluggish. This will in turn negatively affect the potential market growth for businesses that invest in green product packaging solutions.

The need for green product packaging is important to allow Kenyan businesses to have a smooth transition toward green product packaging solutions. Niño (2021) supported this idea. A typical example of such a need is the ban on plastic bags in Kenya by the National Environment Management Authority, NEMA, 2024, on August 28, 2017. By so doing, Kenyan businesses can realize the positive impacts of green product packaging on organizational performance. Therefore, addressing green product packaging is very important in the attainment of SDGs within Kenya's evolving marketplace.

Research Objectives

1. This study seeks to assess the current state of green product packaging
2. To examine the economic implications of adopting green product packaging
3. To explore the environmental impact of green packaging on consumer perception and brand reputation
4. To Identify the Drivers and Barriers to Implementing Green Product Packaging

Theoretical Review

Diffusion of innovation theory

Diffusion of innovation theory, developed by sociologist Everett Rogers in 1962, explains how new ideas, technologies, or practices spread within societies or organizations (Chinyere et al., 2024). According to Rogers (1962), individuals are categorized into different adopter categories based on their willingness to try out new ideas, namely: innovators, early adopters, early majority, late majority, and laggards. Green product packaging innovations such as biodegradable plastics, recycled paper, plant-based alternatives, and sustainable packaging design represent novel approaches to addressing environmental challenges in the packaging

industry. Usually, when new innovative products are introduced, they are initially adopted by a few groups of people (Chinyere et al., 2024). Later, many innovations will begin to spread. The Diffusion of Innovation Theory, as explained by Young et al. (2020), explains the curiosity for innovation reflected in the acceptance of active and intelligent eco-packaging. According to Rogers (1962), beyond a certain 'critical mass' of adopters, the innovation will diffuse without much stimulation, as explained by Chinyere et al. (2024).

This would, in turn, suggest that organizations pioneering or adopting such innovations early can have a competitive advantage by capturing market share (Branstad & Solem, 2020), hence attracting environmentally conscious consumers. Through amalgamating environmental regulations and the diffusion of innovation, the eco-packaging industry standards can be positively influenced.

Resource Based View (RBV) Theory

It was founded in 1959 with the works of a strategic theorist named Edith Penrose that the Resource Based View Theory was able to evolve into prominence (Barney & Arian 2008). Organizations will be able to get competitive advantages through strategic positioning and organizations' effectiveness by providing unique products characterized by Value, Rarity, Inimitability and Non-Substitutability.

This is to say that through the RBV theory, organizations can achieve sustained competitive advantage by leveraging unique, valuable, and difficult-to-imitate resources and capabilities. In this study, green product packaging can be regarded as a unique resource that can attain organizational competitiveness through improved brand differentiation, cost saving and access to environmentally conscious consumer segment. Khanra et al. (2022) point out that green product packaging innovation has the potential to become a critical organizational resource in the attainment of competitive advantage while contributing to sustainable development at the same time. That is, green packaging innovation has the potential to address the dilemma between consuming the available resources and preserving them for the future. Therefore, the organizations that can integrate green product packaging into their strategic resources are in a better position to leverage market competitiveness and reduce risks related to environmental regulations and consumer preferences.

Institutional Theory

This theory examines how organizations conform to external norms, values, and expectations to gain legitimacy and maintain their social license to operate. Institutions together with the board of directors can utilize this theory to achieve organizational legitimacy within their environment (Mirzakhanyan, 2005). The adoption of green packaging can be seen as a response to institutional pressures from regulatory bodies, environmental Non-Governmental Organizations (NGOs), and increasingly environmentally aware consumers (Lim, 2022).

Organizations that adopt green product packaging proactively will be seen as those that not only comply with the regulatory requirements but also show a commitment to sustainability. This, according to Coelho et al. (2020), enhances legitimacy and reduces reputational risks related to environmental impact. The theory of institutions also explains how massive improvements in the conditions of green packaging business have resulted from market-based institutional reforms across the globe. According to Risi et al. (2023), Institutional theory is able to establish organizational perceptions about CSR.

Conceptual Review

This study discusses the following attributes of green product packaging: green product packaging materials, eco-packaging design, packaging practices, and regulatory compliance in relation to organizational performance. Green product packaging focuses on the use and reuse of sustainable materials and design for the packaging of goods (Wandosell et al., 2021). According to Wandosell et al., consumers' perception of green packaging is concentrated on biodegradability, recyclability, design, and price.

Packaging material concept realizes that plastics account for 60% of packaging materials (Wu et al., 2021), forming a huge percentage of non-biodegradable waste. Biodegradable plastics are those that decompose naturally over time (Moshood et al., 2022). Therefore, recycling of plastics and the possibility of large-scale manufacturing of biodegradable plastics can play a critical role in green product packaging thereafter curbing environmental pollution.

Similarly, recycled paper concept refers to quality reuse (Tonini et al., 2022) of paper to reproduce eco-friendly packaging materials. Europe continues to lead in paper recycling followed by North America (Bajpai, 2024) as compared to Africa and Asia which are still lagging behind. By recycling paper and using recycled paper organizations will align to Sustainable Development Goals by substantially reducing waste generation through prevention, reduction, recycling and reuse (Ghafari, 2022).

Packaging design concept refers to the use of sustainable packaging design, reduction of packaging material, and recyclability as a packaging design strategy that can lead to greater eco-efficiency. It is viewed to be packaging invention and innovation strategies incorporating socio-environmental concerns (Zeng et al., 2020). Incorporation of reduction of packaging materials into packaging design can ease economic costs of packaging and environmental impacts (Escursell et al., 2021). It has been noted that it is important to incorporate the ability to reuse materials during the eco-packaging design is called recyclability (Bauer et al., 2021). The concept of green packaging practices invokes the use of biodegradable plastics, recycled paper, and plant-based alternatives, hence reduction in packaging materials for reducing pollution. Eco-friendly packaging could be adhered to production, consumption, or at each stage of the product life cycle and supply chain level, to curb environmental pollution (Murtas et al., 2022).

Organizations that proactively adopt green product packaging not only comply with regulatory requirements but also signal their commitment to sustainability (Coelho et al., 2020). Green product packaging innovation can become a valuable organizational resource for establishing competitive advantage (Khanra et al., 2022) hence increasing market share.

Empirical Review

In recent times, the integration of green product packaging into business strategies is increasing as different organizations try to show compliance with environmental SDGs. Various empirical studies have established the relationship between green product packaging and organizational performance. These dimensions of organizational performance include cost efficiency, regulatory compliance, innovation, brand image, CSR, and financial performance.

The Current Landscape of Green Product Packaging

Globally, the study by Wandosell et al. (2021) explored the connection between green packaging from both consumer and business perspectives. Utilizing Scopus visual analytics and clustering techniques, the researchers analyzed a vast dataset of over 70 million records from 5,000 publishers spanning the years 1990 to December 2020. They categorized the discussion around green packaging into two primary perspectives: consumer-oriented and business-oriented.

From a content perspective, the topics related to green packaging were further examined across several dimensions. These included the design and materials used in green packaging, the associated costs, waste management, the role of circular economy practices, logistics and supply chain considerations, marketing strategies, and corporate social responsibility (CSR). The study revealed that most of the academic output on green packaging comprised journal articles, which accounted for 72.2% of the analyzed documents. Conference proceedings followed at 15.4%, and books constituted the remaining 12.4%. Notably, interest in green packaging has grown significantly, with a marked increase in studies on the subject in the four years leading up to 2021.

In Sub-Saharan Africa, the local context offers a compelling case for the role of green packaging, particularly concerning food security and environmental sustainability. According to Tapsoba et al. (2022), the population in this region is projected to double by 2050. However, in 2020, approximately 21.4% of the population experienced undernourishment, highlighting the urgent need for improved food systems. The study identified that traditional diets in Sub-Saharan Africa are predominantly reliant on grains, roots, and tubers, with limited integration of fruits and vegetables. Incorporating more fruits and vegetables into diets could significantly reduce malnutrition.

Achieving global goals like the United Nations Sustainable Development Goals (SDG2: Zero Hunger and SDG3: Good Health and Well-being) necessitates an increase in fruit and vegetable production to meet nutritional needs. Tapsoba et al. (2022) highlighted that most losses of fruits and vegetables in the region occur before consumption, due to poor handling and inadequate

preservation methods. Eco-friendly packaging emerges as a potential solution, as it can extend the shelf life of food, fruits, and vegetables. By preserving these essential items, eco-packaging not only contributes to reducing hunger but also helps mitigate environmental pollution in Sub-Saharan Africa.

Economic Implications of Adopting Green Product Packaging

The adoption of green product packaging has both direct and indirect economic implications, as evidenced by studies conducted in various regions. Mukonza and Swarts (2020) investigated the impact of green marketing strategies within South Africa's retail sector, focusing on two major chains: Woolworths and Pick n Pay. Using a case study approach, the researchers employed stratified purposive sampling to conduct in-depth interviews and administer questionnaires to senior management. Additionally, they analyzed websites and documents to ensure a comprehensive understanding through triangulation.

Their findings suggest that while green marketing strategies may not immediately enhance business performance, they can significantly improve the quality of products and services and bolster corporate reputation. These factors, in turn, contribute to improved business performance over time. The study highlighted a consistent increase in sales for both retailers, particularly in food-related categories, since 2014. The implementation of green packaging emerged as a critical factor in this upward trend, leading to notable sales growth for both Woolworths and Pick n Pay.

Further insights into the economic implications of green initiatives come from a study conducted in Kigali, Rwanda, by Kabera et al. (2019). This study compared Kigali's waste management practices with those in other major East African cities, including Dar es Salaam (Tanzania), Kampala (Uganda), Nairobi (Kenya), and Maputo (Mozambique). The findings revealed that Kigali had achieved remarkable success in waste reduction through recycling and green product management initiatives. This success has not only enhanced environmental sustainability but has also attracted economic assistance from international organizations such as Belgium, the United Nations, and the World Bank.

A significant economic implication highlighted by Kabera et al. (2019) is that 95% of the population in these East African cities pays for waste collection services, often bundled with security fees. This widespread financial participation underscores the potential of green initiatives to create a self-sustaining economic model while addressing environmental challenges. The Rwandan example demonstrates how effective waste management and green packaging practices can drive both local and international economic benefits, setting a benchmark for other cities in the region.

Green Packaging on Consumer Perception and Brand Reputation

Consumer perception of green packaging and its impact on brand reputation varies significantly across regions and consumer groups. Otto et al. (2021) explored the perceptions of European

consumers regarding eco-friendly food packaging. The study revealed that consumers generally associate materials such as glass, metal, plastic, and paper/cardboard with eco-friendly packaging. However, these perceptions do not always align with objective measures of environmental impact, which were evaluated using criteria such as carbon footprint, recycling rates, reuse rates, and biodegradability.

The study highlighted a disconnect between consumer evaluations and scientific life cycle assessments. While theoretical concepts like recyclability and biodegradability are often used as benchmarks, many consumers rely on emotional and affective judgments rather than cognitive reasoning when evaluating food packaging. Furthermore, their practical understanding of environmental factors such as recyclability and reuse remains limited. This gap in knowledge often results in purchasing behavior that is less environmentally friendly than consumers might intend.

In Sub-Saharan Africa, understanding consumer perception of green packaging necessitates a deeper exploration of green consumerism within the region. According to Traoré et al. (2023), green packaging has yet to receive significant attention in this part of the world, despite its potential importance for sustainable consumption. A systematic review of scientific literature from 2010 to 2021 analyzed patterns of green perception using parameters such as green consumption, behavior, and location. The review identified 48 relevant articles from sources like Scopus, Web of Science, and Google Scholar, indicating a growing body of research in the past five years.

The findings suggest that much of the research on green consumerism in Sub-Saharan Africa is concentrated in emerging economies like South Africa and Nigeria and often focuses on upper social classes. However, the rise of a middle-class consumer base in the region is expected to expand the adoption of green packaging and foster more positive perceptions across a broader range of goods and services. This shift signals an opportunity for businesses to build stronger brand reputations by catering to an increasingly environmentally conscious market segment.

Drivers and Barriers for Green Product Packaging

Green product packaging is increasingly recognized as both an environmental necessity and a complex challenge. Afif et al. (2022) conducted a cross-disciplinary systemic literature review to identify the drivers, barriers, and performance outcomes associated with sustainable packaging. Using the Methodi Ordinatio methodology, they identified 48 high-impact articles published in 26 academic journals, highlighting the multifaceted nature of this topic. The review underscores the significant role packaging plays in waste production. In industrialized nations, packaging contributes to approximately 30–35% of municipal waste, while in developing countries, this figure ranges from 15–20%. These statistics reflect the urgent need for sustainable solutions in packaging.

Several key drivers propel the adoption of green product packaging. Among these are integrative and collaborative supply chains, environmental capabilities and resources, market-based

instruments, cost reduction initiatives, consumer pressure, competitive advantage, and regulatory requirements. Together, these factors create a strong case for businesses to adopt more sustainable practices. However, significant barriers also hinder widespread implementation. These include ambiguity regarding the cost-benefit balance of green packaging, the additional costs associated with sustainable materials, and the complex trade-offs between packaging requirements and environmental goals.

A major challenge in the transition to sustainable packaging lies in the prevalence of plastic, which constitutes 60% of packaging materials. Wu et al. (2021) emphasize the difficulties associated with biodegradable polymers, which are often proposed as alternatives to conventional plastics. Practical challenges, such as scalability and process efficiency, hinder the widespread adoption of biodegradable plastics in the food packaging sector. Moreover, barrier properties, such as strength and durability, remain areas that require significant innovation to match the performance of non-biodegradable plastics. These insights highlight the dual nature of green packaging as both an opportunity and a challenge, with economic, environmental, and technological considerations shaping its future trajectory. Overcoming these barriers will require concerted efforts from policymakers, businesses, and researchers to create practical, cost-effective, and environmentally friendly packaging solutions.

METHODOLOGY

This study employs desktop research through reviewing empirical literature relating green product packaging to organizational performance. The empirical review is conducted on the Google Scholar platform. Boolean operators "AND" and "OR" are used to search reviewed articles published between January 2020 and July 2024. Keywords are searched and used with the Boolean operators. Considering that desktop research was used, therefore secondary sources obtained revealed information from qualitative methods, quantitative methods and mixed methods.

FINDINGS

The United Nations, through the United Nations Environment Programme (UNEP), has been leveraging marketing strategies to advocate for sustainable production and consumption practices across the entire life cycle of products (Lim, 2022). This aligns with the goals of the Vision 2030 Agenda, particularly the twelfth Sustainable Development Goal (SDG), which emphasizes the need to substantially reduce waste generation through prevention, reduction, recycling, and reuse (Ghafari, 2022).

Globally, Europe remains a leader in paper recycling efforts, followed closely by North America. In contrast, Africa and Asia are still trailing in adopting robust recycling practices (Bajpai, 2024). This disparity highlights the need for stronger policy frameworks and investments in recycling infrastructure in these regions.

In Sub-Saharan Africa, the rise of middle-class consumers is emerging as a key driver of green product packaging adoption. This demographic shift is expected to enhance the consumption of sustainable packaging and foster a more positive perception of eco-friendly goods and services across a wide range of industries (Traoré et al., 2023).

Despite these promising developments, there are notable gaps in consumer awareness in countries like Kenya. A lack of understanding about the benefits of green product packaging continues to impede market demand and the broader acceptance of sustainable packaging solutions (Omayio et al., 2021). This suggests the need for targeted education and awareness campaigns to bridge the knowledge gap and stimulate consumer-driven demand for green alternatives.

Economically, green product packaging contributed to impressive sales increases in South Africa's largest retail organizations (Mukonza & Swarts, 2020). Even so, the incorporation of reduction of packaging materials into packaging design can ease economic packaging costs (Escursell et al., 2021). On the contrary, cost versus benefit requirements remain a complex trade-off in the adoption of green product packaging (Afif et al., 2022).

Must be remembered that plastics account for 60% of packaging materials Wu et al. (2021) yet they are highly non-biodegradable. Therefore, production of biodegradable plastic remains a challenge which cannot be taken lightly MacLeod et al. (2021).

In this particular regard, the government of Rwanda is envied and lauded by other Africans by leading in waste reduction, through recycling and adoption of green product packaging. That success of Rwanda has indeed been enabled by enactment and adherence to environmental regulations consistent with international SDGs.

CONCLUSION

This study has examined the intricate connections between green product packaging and organizational performance, highlighting its transformative potential in driving sales and enhancing market competitiveness. For example, South African retail giants Woolworths and Pick n Pay experienced remarkable sales growth and improved market positioning following the adoption of green packaging practices. Similarly, the United States and other developed nations have made significant strides by setting ambitious targets for increasing the recyclability of packaging materials and reducing single-use plastics.

Globally, the alignment with Sustainable Development Goals (SDGs) continues to guide efforts to combat climate change by reducing waste through prevention, recycling, and reuse. In Africa, Kenya took a landmark step by banning plastic bags on August 28, 2017. However, the adoption of green product packaging in the country remains limited, with consumer awareness still low and

visible pollution from packaging materials persisting. On the other hand, Rwanda's adoption of green packaging has yielded not only environmental benefits but also economic gains, setting a benchmark for the East African Community.

The United Nations, through initiatives like green marketing, is playing a pivotal role in promoting sustainable practices such as recycling and eco-friendly packaging. Drawing insights from the Resource-Based View theory, Diffusion of Innovation theory, and Institutional theory, the potential for a sustainable world through green packaging is evident. However, achieving this vision requires organizations and governments to commit to strict adherence to regulatory frameworks at both local and international levels. Such collective efforts will pave the way for a greener, more sustainable future.

Abbreviations: This study incorporates several key abbreviations to facilitate understanding. The Sustainable Development Goals (SDGs) provide a global framework for promoting sustainable practices, while the National Environment Management Authority of Kenya (NEMA) serves as a regulatory body overseeing environmental initiatives in Kenya. The United Nations (UN) and its specialized agency, the United Nations Environment Programme (UNEP), play a central role in advocating for global sustainability. The Resource-Based View (RBV) and its associated concept of Valuable, Rare, Inimitable, and Non-Substitutable (VRIN) resources are theoretical foundations explored in this study. Non-Governmental Organizations (NGOs) contribute to sustainable efforts, often working alongside businesses to promote Corporate Social Responsibility (CSR). Finally, the study places particular emphasis on Sub-Saharan Africa (SSA), a region crucial to understanding the challenges and opportunities associated with green product packaging.

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