

Sustainable Packaging in Health-Oriented Brands and Its Influence on Consumer Trust, Perceived Healthfulness, and Purchase Behaviour: A Case Study Based Analysis

Pankaj Tyagi¹

Research Scholar

J.S. University, Shikohabad

Pankajtyagi078@gmail.com

Dr. Gaurav Kumar Gupta²

Professor, Faculty of Commerce

J.S. University, Shikohabad

Gauravkumargupta835@gmail.com

Dr. Akhilesh Upadhyay³

Associate Professor, Faculty of Commerce

J.S. University, Shikohabad

upadhyay638@gmail.com

Abstract

Sustainable packaging has become a prominent strategic lever for health-oriented brands, where packaging cues influence credence-based evaluations such as safety, authenticity, and perceived healthfulness. Yet consumer response is heterogeneous: eco-packaging can strengthen trust and trigger a green–health halo, while simultaneously provoking skepticism and price-resistance, limiting behavioral conversion. This paper develops a moderated mediation framework linking perceived sustainable packaging (PSP) to purchase behavior via consumer trust and perceived healthfulness, moderated by green skepticism. To ground theory in real-world practice, the study uses a multiple case study approach across three health-oriented brand initiatives: (i) Dove’s refillable deodorant packaging (Unilever), (ii) Danone Actimel’s packaging redesign reducing plastic and improving recyclability, and (iii) Himalaya BabyCare’s packaging revamp aimed at significant plastic reduction. Cross-case synthesis indicates that (1) visible and comprehensible sustainability cues can enhance trust when aligned with product integrity and hygiene expectations; (2) sustainable packaging often functions as a “health signal,” elevating perceived healthfulness especially for wellness categories; and (3) skepticism and affordability constraints shape boundary conditions, particularly when sustainability claims are not paired with clear proof cues. The paper concludes with an empirically testable model and research agenda suitable for SEM/experimental validation.

Keywords: sustainable packaging; health brands; consumer trust; perceived healthfulness; green–health halo; green skepticism;

1. Introduction

Packaging is increasingly a strategic “interface” between brand promises and consumer evaluation—especially in health-oriented markets where consumers infer safety, purity, and efficacy from extrinsic cues. Concurrently, sustainable packaging has gained momentum as firms respond to circular economy targets and rising consumer attention to environmental impacts (Ellen MacArthur Foundation, 2023; NielsenIQ, 2023).

Independent market intelligence indicates that consumer priorities in packaging decisions often remain anchored in hygiene and shelf-life concerns, even as sustainability salience rises; this creates a structural tension between sustainability-led redesign and perceived product protection—particularly relevant for health-positioned goods (McKinsey & Company, 2023, 2025). In addition, macroeconomic pressures and the perceived “cost of sustainability” can slow adoption of more sustainable packaging solutions across the value chain (Reuters, 2024).

Against this backdrop, the central problem is not whether sustainable packaging matters, but how it influences consumer behavior in health-oriented categories and under what boundary conditions. This paper advances a moderated mediation explanation: sustainable packaging cues shape purchase behavior via two psychological mechanisms—trust and perceived healthfulness—while green skepticism attenuates these effects.

2. Literature Review

a. Sustainable packaging as a strategic cue in health-oriented categories

Sustainable packaging has moved beyond operational compliance and is increasingly treated as a market-facing strategic cue that shapes consumer evaluation and brand meaning (Euromonitor International, 2024; McKinsey & Company, 2023, 2025). In health-oriented categories—such as functional foods, baby care, and health-and-hygiene personal care—packaging cues are especially influential because product quality and health outcomes are often credence attributes (difficult to verify at purchase). As a result, consumers rely on extrinsic indicators (pack structure, materials, claims, certifications, and disclosure quality) to infer product integrity and brand responsibility.

Recent market evidence indicates consumers frequently express strong sustainability preferences; however, these preferences are mediated by perceived practicality, price sensitivity, and trust in claims (McKinsey & Company, 2023, 2025; PwC, 2024). Industry reporting also suggests cost constraints and perceived switching frictions can reduce willingness to adopt sustainable packaging formats—an important contextual boundary when interpreting consumer intent–behavior gaps (Reuters, 2024).

b. Consumer response mechanisms: trust and perceived healthfulness

- **Trust formation under sustainability and risk conditions**

Trust is central in health-related categories where contamination risk, misinformation anxiety, and authenticity concerns are salient. Empirical evidence indicates that *trust* is a key pathway linking food-related perceptions to continued use intentions in platform-mediated food contexts; importantly, eco-friendly packaging can moderate the relationship between healthiness perceptions and trust, suggesting that sustainable packaging can operate as a trust-reinforcing cue (Sun et al., 2024). In parallel, research on sustainability-linked food communication indicates that sustainability cues can influence perceptions of product safety and reassurance—consistent with the view that sustainability cues can function as integrity/competence signals (Pasta et al., 2023).

At a market level, leading consumer studies emphasize that sustainability claims are increasingly scrutinized, and credibility infrastructure (clear labeling, transparent information architecture, verifiable claims) is becoming a differentiator (Euromonitor International, 2024; NielsenIQ, 2023). This aligns with academic arguments that sustainability cues cannot be presumed uniformly positive; instead, they interact with consumer trust thresholds and category-specific risk profiles.

- **The “green–health halo”: sustainable packaging as a health signal**

Beyond trust, a rapidly growing literature highlights a sustainability-to-health inference pathway. Recent peer-reviewed work shows that when consumers perceive products as sustainable, they may infer that these products are also healthier—a “halo effect” that can influence choices and evaluations (Boncompagni, 2025). Packaging research in marketing similarly discusses halo effects whereby sustainable packaging alters

perceived healthiness (and sometimes tastiness or convenience), demonstrating that sustainability cues can systematically shift multi-attribute product judgments (Hallez, 2025).

Evidence is strengthening that eco-friendly packaging can increase perceived healthiness, which subsequently increases purchase intention (Ruan et al., 2026). This is particularly important for health-oriented brands because perceived healthfulness is often a direct antecedent of willingness to pay and brand preference; therefore, sustainable packaging can become a dual-path lever: it boosts purchase propensity through both (i) *trust* and (ii) *perceived healthfulness*.

c. Boundary conditions: skepticism, negative halo effects, and performance expectations

- **Green skepticism and credibility erosion**

While sustainable packaging can create positive inferences, the same cue can generate resistance when consumers suspect “greenwashing” or perceive claims as vague, inflated, or unverifiable. Green skepticism is increasingly modeled as a stable orientation characterized by doubts regarding the authenticity or efficacy of environmental claims, with measurable effects on consumer response (Zhang et al., 2025). This matters directly for moderated mediation logic: if skepticism reduces the credibility of sustainability cues, then both trust formation and halo-driven healthfulness inferences should weaken.

- **Negative halo effects and category sensitivity**

Not all sustainable packaging generates favorable responses. Research on “negative halo effects” demonstrates that certain sustainable packaging innovations can lead consumers to expect inferior sensory outcomes, lower quality, or reduced desirability, although communication and aesthetic strategies can mitigate such negative inferences (Negative halo effects of sustainable packaging, 2023). These findings are particularly relevant in health-oriented categories because consumers are risk-sensitive: if sustainable packaging is perceived to compromise protection, hygiene, freshness, or performance, the trust pathway may reverse.

- **Practical constraints and affordability dynamics**

Independent market intelligence suggests consumers often support sustainability in principle but become price-sensitive under inflationary pressure, and stated willingness to pay does not always translate into actual behavior (McKinsey & Company, 2023, 2025; PwC, 2024). Complementing this, industry reporting indicates commercial buyers and consumers may resist switching when sustainable packaging increases costs or creates operational friction (Reuters, 2024). This reality implies that empirical models should incorporate (a) skepticism and (b) economic friction as key boundary conditions.

d. Integrating the literature: why a moderated mediation model is justified

The literature supports an integrated mechanism where perceived sustainable packaging (PSP) influences consumer purchase outcomes through two parallel mediators:

1. **Consumer trust**, strengthened when sustainable packaging is credible and does not threaten performance/safety expectations (Pasta et al., 2023; Sun et al., 2024).
2. **Perceived healthfulness**, increased through sustainability-based halo effects that frame eco-packaging as a signal of “cleaner/healthier” product identity (Boncompagni, 2025; Hallez, 2025; Ruan et al., 2024).

At the same time, the literature indicates that green skepticism (and related credibility concerns) can weaken these relationships, yielding conditional or even negative effects (Zhang et al., 2025; Negative halo effects of sustainable packaging, 2023). This combination of (i) dual mediators and (ii) skepticism-based boundary conditions strongly motivates a moderated mediation framework for health-oriented brands.

3. Case Studies

- Case 1: Dove (Unilever) — Refillable deodorant and “trust-through-design”

Unilever announced Dove’s first refillable deodorant system featuring a durable stainless-steel case and refills designed to reduce plastic use; the company reported the

refill format uses substantially less plastic than a regular stick pack and uses recycled content in refill packaging (Unilever, 2021).

Mechanism interpretation

- **PSP → TRU:** A refill system is *highly observable* (behaviorally verifiable) and can signal long-term commitment, not merely “label claims,” strengthening trust.
- **PSP → PHF:** In wellness personal care, eco cues can spill over into “cleaner/safer” brand meaning, enhancing perceived healthfulness/safety associations.
- **Boundary condition:** If refills create friction (availability, inconvenience, price), the PSP → PB pathway may weaken—consistent with market evidence that cost concerns can impede sustainable packaging uptake (Reuters, 2024).

Case 2: Actimel (Danone) — Sleeve removal to improve recyclability and reduce plastic

A packaging and recycling organization reported that Danone’s Actimel removed plastic labels/sleeves from its small bottles to reduce plastic usage and improve recyclability, with a quantified reduction figure and broader eco-design rationale (Fost Plus, 2023). Danone also publicly frames packaging transformation within circular and low-carbon packaging commitments (Danone, n.d.).

Mechanism interpretation

- **PSP → TRU:** In functional dairy, consumers are sensitive to hygiene, safety, and authenticity. A design change that simplifies materials and improves recyclability can strengthen trust—particularly when disposal guidance becomes clearer.
- **PSP → PHF:** Actimel’s health positioning can be reinforced by eco-design, potentially amplifying a green–health halo (eco cues reinforcing “better-for-me”).
- **Boundary condition:** If consumers infer that material reduction compromises barrier properties or freshness, trust benefits may be offset—aligning with evidence that consumers continue to prioritize hygiene and shelf life in packaging decisions (McKinsey & Company, 2023, 2025).

Case 3: Himalaya BabyCare — Packaging revamp linked to quantified plastic reduction

Independent Indian marketing press reported that Himalaya BabyCare redesigned packaging across its Gentle Baby Care range, projecting elimination of a large volume of plastic over a five-year period and explicitly linking the change to a sustainability roadmap (afaqs!, 2025). Himalaya also communicates broader sustainable packaging actions, including elimination of PVC from parts of its supply chain (Himalaya Wellness, n.d.).

Mechanism interpretation

- **PSP → TRU:** Baby care is a high-trust, high-risk category; parents scrutinize safety and credibility cues. Specific targets and redesign claims can increase trust *if* consumers perceive proof and competence.
- **PSP → PHF:** Eco-packaging may cue “gentler/safer” interpretations, increasing perceived healthfulness/safety by inference.
- **Skepticism sensitivity:** Because baby care marketing is heavily scrutinized, green skepticism is likely a strong moderator; proof cues (materials, certifications, transparent disclosure) are critical.

4. Discussion and Managerial Implications

The objective of this study was to examine how sustainable packaging in health-oriented brands influences consumer trust, perceived healthfulness, and purchase behavior through a moderated mediation framework.

4.1 Sustainable Packaging as a Trust Signal

Across all three cases, sustainable packaging initiatives were positioned not merely as environmental upgrades but as signals of **corporate responsibility and product integrity**. The Dove refillable deodorant case demonstrates a design-based sustainability shift—observable, tangible, and behaviorally verifiable—which likely strengthens trust through perceived long-term commitment rather than symbolic “eco-labeling” (Unilever, 2021).

Similarly, Actimel’s removal of plastic sleeves to improve recyclability and reduce plastic complexity aligns with circular economy principles emphasizing design simplification and

material transparency (Fost Plus, 2023; Danone, n.d.). In health-related dairy products where contamination risk and authenticity are salient, material clarity can reinforce perceptions of competence and safety.

Himalaya BabyCare’s packaging revamp, linked to quantified plastic reduction targets, highlights how specificity enhances credibility (afaqs!, 2025). In baby care—arguably one of the most trust-sensitive segments—quantification and roadmap framing act as reassurance devices.

These patterns align with academic findings suggesting that eco-friendly packaging strengthens trust when perceived as credible and performance-neutral (Sun et al., 2024). However, literature also cautions that consumers prioritize hygiene and functionality in packaging decisions (McKinsey & Company, 2023, 2025). Thus, sustainable packaging enhances trust **only when it does not compromise safety expectations.**

4.2 Sustainable Packaging as a Health Signal (Green–Health Halo)

Beyond trust, the literature indicates sustainability cues can alter perceptions of healthfulness, producing halo effects (Boncompagni, 2025; Ruan et al., 2026). The case evidence is consistent with this mechanism:

- In Actimel, sustainability cues (improved recyclability) are likely to reinforce “cleaner” and “better-for-me” brand associations.
- In Himalaya BabyCare, eco-packaging plausibly strengthens perceptions of gentleness and safety.
- Even in Dove’s hygiene category, refillable formats may connote “cleaner,” “minimal,” or “less chemical” brand imagery.

The halo pathway is especially potent in health-oriented categories because environmental responsibility and bodily well-being are cognitively aligned within consumers’ mental schemas. Empirical research demonstrates that eco-friendly packaging can elevate perceived healthiness, which in turn increases purchase intention (Ruan et al., 2026).

However, literature on negative halo effects warns that poorly executed sustainable packaging can create unintended inferences—e.g., lower product performance or compromised protection (Negative halo effects of sustainable packaging, 2023). This reinforces the importance of examining perceived healthfulness as a mediator rather than assuming uniformly positive outcomes.

5. **Conclusion**The final synthesis of case evidence and recent literature indicates that sustainable packaging in health-oriented brands influences purchase behavior through two primary psychological mechanisms—consumer trust and perceived healthfulness—while green skepticism and economic constraints moderate these effects. The case studies of Dove, Actimel, and Himalaya BabyCare illustrate that sustainable packaging can function as both an ethical signal and a health signal. However, its effectiveness depends on observability, credibility, and preservation of functional performance. The findings suggest that managers in health-oriented brands must treat sustainable packaging not as a peripheral sustainability communication device but as a visible, structural component of brand strategy. First, sustainability initiatives should be designed to be clearly observable and materially evident. Structural innovations—such as refill systems, mono-material formats, elimination of unnecessary sleeves, or substantial reductions in virgin plastic—are more likely to generate consumer trust than symbolic eco-labels or vague environmental messaging. When consumers can physically perceive the packaging transformation, the sustainability signal gains credibility and strengthens its influence on brand evaluation. Second, firms must ensure that sustainable packaging does not compromise core functional expectations. In health-oriented segments such as baby care, functional dairy, and hygiene products, consumers prioritize safety, hygiene, freshness, and product protection. Any redesign perceived to weaken barrier properties, durability, or cleanliness may erode trust and negate sustainability gains. Sustainable packaging must therefore coexist with uncompromised product integrity; otherwise, the trust pathway identified in this study may reverse. Third, investment in proof and transparency is essential to mitigate green skepticism. Quantified environmental targets, clear communication of recycled content percentages, third-party certifications, and unambiguous disposal instructions contribute to credibility formation. As sustainability claims become more widespread, consumers increasingly demand evidence

rather than abstract assertions. Transparent communication reduces suspicion of greenwashing and strengthens both trust and perceived healthfulness inferences.

Fourth, pricing strategies require careful calibration. Although sustainability can justify moderate price premiums due to enhanced perceived value and moral satisfaction, excessive premiums risk dampening purchase conversion—particularly in price-sensitive markets. Firms should align sustainability-led pricing with consumer value perceptions and consider offering entry-level sustainable options or gradual transition strategies to avoid behavioral drop-off.

Finally, brands must avoid exploiting green-health halo effects in ways that imply unsubstantiated health benefits. While sustainable packaging can elevate perceived healthfulness through associative inference, ethical marketing practice requires that such perceptions are not manipulated to mislead consumers. Regulatory compliance and long-term brand equity depend on maintaining a clear distinction between environmental attributes and verified health claims.

Thus, sustainable packaging is not merely an environmental intervention; it is a strategic consumer-perception instrument whose behavioral impact is contingent upon trust architecture, halo effects, and boundary conditions.

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