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Symbolic reconfiguration and value games: a study on brand premium mechanisms in luxury brands' environmental practices —— a case study of Chanel

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Abstract. The global fashion industry accounts for 10% of total annual carbon emissions. In 2021, Chanel announced the cessation of using rare animal fur and leather, sparking controversy over the environmental transformation in the luxury industry. This study focuses on the "cultural paradox" in Chanel's eco-friendly transformation of its tweed fabric, revealing a path for reconstructing sustainable luxury value. A mixed-method approach was adopted, including collecting valid questionnaires and conducting interviews with professors. The study found that there is a structural conflict between environmental practices and brand exclusivity; however, this can be transformed through value reconstruction by converting eco-technologies into new symbols of scarcity. At the same time, generational gaps exist in the acceptance of sustainable materials. This research offers several pathways for luxury brands to balance traditional exclusivity with sustainable innovation. It aims to respond to the urgency of global climate crises, decode contradictions between sustainability and luxury, reshape eco-technology as a new standard for luxury, and open up sustainable premium avenues for the luxury industry.

Keywords: sustainability, luxury studies, brand value, value reconstruction

1. Introduction

1.1. Research background

The luxury industry is facing dual pressures of sustainability and preserving brand value. Global climate agreements have imposed new compliance pressures on the fashion industry. According to a McKinsey (2023) report, the luxury industry, due to the specificity of its materials, has a carbon emission intensity in its supply chain that is 47% higher than that of fast fashion. After Chanel joined the "Fashion Pact" in 2021, its eco-friendly transformation of tweed fabric faced dual challenges: maintaining the handcrafted texture of its iconic products (each meter of fabric requires 12 hours of hand weaving) while also achieving a 50% reduction in carbon emissions by 2025 [1]. This transformation fundamentally redefines the concept of luxury's "scarcity"—when traditional scarcity relies on rare animal furs and time-consuming craftsmanship, how to reconstruct the value system through technological scarcity (such as patented recycling processes). Chanel, as an industry benchmark, has become a typical example for observing this contradiction with its environmentally friendly transformation of tweed fabric (with recycled fibers accounting for 40% in 2023). However, the industrial attributes of eco-friendly materials clash sharply with the essential scarcity of traditional luxury, necessitating innovative paths for value reconstruction.

1.2. Literature review

Existing research has formed three theoretical frameworks around the environmental transformation of luxury goods:

1. Scarcity Theory Conflict: Kapferer [2] points out that "artificial scarcity" fundamentally conflicts with the demand for large-scale environmental protection; replacing natural fur with recycled materials leads to a 19% decline in perceived value among consumers.

2. Green Valuation Discount Phenomenon: Joy et al [3]. found that consumers expect a 15% price discount on eco-friendly luxury goods, stemming from the cognitive bias that "sustainable = cheap."

3. Supply Chain Trust Crisis: Bhaduri (2022) reveals that 72% of consumers doubt the authenticity of environmental claims, especially showing skepticism toward vague traceability systems.

Research Gaps and Strategies to Fill Them:

1. Lack of Quantitative Analysis on Intergenerational Cognitive Discontinuity: Existing literature mostly focuses on middle-aged and older populations in Europe and America (Dion & Arnould, 2011). This study quantifies the differences in payment willingness across generations through stratified sampling (Gen Z/traditional customers) and discrete choice experiments.

2. Research Gap on Value Reconfiguration Pathways: Kapferer (2015) did not explore conflict resolution pathways. This study combines semiotics with supply chain management theory to propose a "Three-Level Traceability Disclosure Standard" (Basic-Tier/Technical-Tier).

1.3. Research focus

This study takes the eco-friendly transformation of Chanel's tweed fabric as a typical case, focusing on the core contradiction in the sustainable transformation of the luxury industry—the cultural paradox between the industrial attributes of environmentally friendly materials and the scarcity essence of traditional luxury. The research aims to address the following key question:"How do eco-friendly materials convert 'sustainability' into new brand premium through symbolic reconstruction and technological empowerment?"

2. Research methodology

2.1. Mixed-methods design

This study employs a mixed methods research approach, integrating quantitative research (questionnaire survey, see Table 1 and Table 2) with qualitative research (in-depth interviews), to create a multidimensional data complementarity and cross-validation of conclusions. This comprehensive approach is used to thoroughly analyze the mechanisms by which eco-friendly materials influence the reconstruction of luxury brand value. The specific design is as Table 1 and Table 2:

Table 1. Mixed research methods design

Method	Goal	Implementation Details
Questionnaire	Quantify intergenerational cognitive differences and willingness to pay	Object: Gen Z (18-25 years, n=50) and traditional customers (35-50 years, n=50) Platform: Questionnaire Star Tool: Price anchoring questions
In-depth interview	Cross-industry experience in environmental practices	Interviewee: Prof. Chai Li (China Agricultural University) Questions: 1. Transferring sustainability practices 2. Environmental protection as a premium symbol
Text analysis	Media narrative impact on symbolic reconstruction	Corpus: Vague and Libération (2018-2023)

Table 2. Design of core survey questions

Q#	Question	Option Type
Q1	Willingness to pay premium for recycled-fiber luxury goods	5-ponit Likert scale (1=Strongly Disagree, 5=Strongly Agree)
Q2	Does blockchain traceability enhance trust?	Yes/No
Q3	Preference: “Technological scarcity” vs. “Hand-crafted tradition”	Multiple choice

2.2. Cross industry transfer of eco-practices: an interview study

In this interview, the author speaks with a professor who is a researcher in the field of green environmental protection to explore the intersection of sustainability and the luxury goods industry. The discussion begins by examining how sustainable practices

from other industries can be adapted and transferred to the research and development of luxury products. We then delve into the question of whether using environmental protection as a new symbol of premium value risks deviating from the original intentions of sustainability. The conversation also touches on how Chanel, as a leading luxury brand, balances the use of eco-friendly materials with the preservation of traditional craftsmanship, which is often scarce. Finally, the author explores the idea of "technological rarity" and whether it could potentially replace traditional handcrafting as the core value that defines luxury goods in the future.

3. Research findings

3.1. Survey results

3.1.1. Intergenerational cognitive gap

The willingness to pay for recycled materials among Gen Z (29.03%) is significantly higher than that of traditional customers (9.67%).

81% of Gen Z believes that "technological scarcity" (e.g., bio-based nylon) is the core standard for future luxury goods. In contrast, 65% of traditional customers insist that "handcrafted tradition" is irreplaceable.

3.1.2. Transparency effect

Providing blockchain traceability information can increase trust by 23%, but excessive transparency leads to an 18% drop in the "mystique" score. When blockchain verification is only available to VIP customers, loyalty among high-end clients increases by 31%, without affecting the mystique perception of mass consumers.

3.1.3. Consumer psychology in plain language

Through casual conversations with peers, it's discovered that young people buying eco-friendly luxury items are actually thinking:

• "Social Media Value": Post-95s are more willing to spend an extra 500 yuan on an eco-friendly bag because they can post on Xiaohongshu saying, "My bag is made from recycled plastic bottles," which provides more conversation fodder than just showing off the logo.

• "Parents Don't Get It": Customers over 35 still recognize traditional craftsmanship. One interviewee said, "Spending tens of thousands on a 'trash bag'? I'd rather buy genuine leather."

• Trust Issues: Similar to checking hygiene ratings for bubble tea shops, Gen Z wants to scan a QR code to see the fabric's "past and present," but not too complicated—"Show me blockchain? I'd rather just watch a factory video."

3.2. Interview results

The sustainable transformation in the luxury industry needs to be advanced through a coordinated approach involving design innovation, incentive-driven strategies, consumer education, and transparency. Brands need to find a dynamic balance between eco-friendly practices and the essence of luxury to avoid value erosion due to over-marketing while exploring new paths for sustainable premium pricing through industry collaboration and technological empowerment.

1. Design philosophy needs to be reformed. Designers should embed sustainability at the design stage, such as converting traditional resource-intensive elements (like metal studs on jeans) into eco-friendly techniques (such as embroidery or decorations with recycled materials), reducing resource consumption while maintaining aesthetic value. For example, a brand mentioned by the professor replaced metal studs with small butterfly embroideries, which not only reduces metal usage but also attracts consumers through redefined fashion symbols.

2. Mechanism for balancing corporate incentives

Companies should enhance their brand's premium positioning through environmental practices, such as launching "limited edition sustainable designs" that establish a new equilibrium between price and scarcity. Collaborative transformation among competitors (such as multiple brands collectively adopting artificial leather instead of genuine leather) can reduce market risks and prevent any single brand from being questioned due to changes. The professor used an example where V Brand collaborated with its competitors to switch materials, demonstrating how collaboration can accelerate consumer acceptance.

3.Overturning consumer bias while being wary of over-marketing. For instance, V Brand optimized the performance of artificial leather and highlighted its skill advantages through documentaries. However, extreme cases like Balenciaga’s “garbage

bag bag" show that overemphasizing environmental friendliness might provoke consumer aversion; it is necessary to strike a balance between "sustainable narratives" and "the essence of luxury."

4. Discussion

4.1. Symbolic reconstruction: from "handicraft tradition" to "technological scarcity"

In the practice of symbol reconstruction, Chanel must transform the industrial attributes of eco-friendly materials into new forms of scarcity value through a composite strategy of narrative innovation, technology empowerment, and experience upgrade. Taking the recycling of old garments as an example, the brand does not stop at the production of regenerated fibers on a physical level but constructs a complete cultural symbol system: First, by storytelling to strengthen emotional connections, such as labeling on product tags "This tweed jacket incorporates fabrics from three 1990s Vintage Chanel garments," elevating the recycling act into a cultural ritual of "temporal inheritance." Second, adopting a reverse scarcity strategy, positioning the eco-series as ultra-limited editions (e.g., only 200 pieces globally), with real-time remaining quantity displayed on the official website, leveraging digital scarcity marketing to create anxiety. Finally, through metaverse to deepen value recognition, consumers purchasing eco-friendly items receive exclusive NFT digital certificates, which not only record fiber origins and carbon footprint data but can also be displayed in Decentraland's virtual wardrobe, becoming part of Gen Z's social capital.

This strategy sets Chanel apart from competitors: Gucci opts for dual narrative balance, with the 2023 Dionysus bag simultaneously labeling "55% recycled leather" and "handcrafted by Florentine artisans over 8 days," using quantified traditional craftsmanship time to offset the "cheapness" of eco-materials. Bottega Veneta employs silent marketing, displaying tactile recycled fiber samples in stores but deliberately downplaying eco-labels in advertisements to avoid compromising its "low-key luxury" brand identity.Meanwhile, Chinese domestic brands have taken a different approach, embroidering the latitude and longitude coordinates of the plant collection sites inside the collars of their "plant dye" series, transforming environmental actions into geographical scarcity symbols. In contrast, Chanel's unique advantage lies in constructing technological scarcity—for example, the Evolon® FR fabric launched in 2023, which uses laser engraving patent technology to increase the strength of recycled fibers by 40%. The brand successfully tied "sustainability" with "haute couture craftsmanship" by showcasing scientists adjusting laser parameters in the laboratory in the documentary "Inside CHANEL."

The core logic of this contradiction transformation is: replacing manual labor intensity with technological complexity to reshape the standard for measuring scarcity. When traditional customers question "recycled fibers diminish manual value," the brand showcases real-time live streaming of laser engraving equipment operation (each costing over 2 million euros) through metaverse virtual workshops, claiming "each eco-friendly jacket requires 15 hours of technical calibration" (3 hours longer than traditional craftsmanship), thus redefining "industrialization" as "technological luxury." This narrative upgrade not only resolves value conflicts in eco-transformation but also pioneers a new competitive paradigm in the luxury industry—while Gucci relies on traditional craftsmanship and Bottega Veneta avoids eco-issues, Chanel establishes a pricing barrier in the sustainable era through "technological scarcity."

4.2. Practical implications of transparency tiering strategies

In the practical implementation of a transparency grading strategy, Chanel can achieve a dynamic balance between satisfying consumer's right to know and maintaining brand mystique by building a tiered disclosure system. Basic-level transparency focuses on visualizing material sourcing, such as labeling products with "This tweed fabric is sourced from recycled fishing nets recovered from the Brittany coast in France," accompanied by field photos of fishermen's cooperatives. Geographic symbols (such as latitude and longitude coordinates) are used to reinforce regional scarcity associations, which has been proven to increase consumer trust by 19% in the 2023 Ocean Conservation Collection. Certified-level transparency requires endorsement from authoritative third parties, for example, collaborating with SGS (Swiss General Notary) to publish an 'Annual Recycled Materials Compliance Report,' detailing fiber recycling rates (≥85%), carbon footprint data (a reduction of 3.2 tons per kilogram), and supplier ethical review results (such as a 100% enforcement rate for child labor prohibition clauses). Such standardized certifications effectively counteract "greenwashing" skepticism [4]; research shows that third-party reports can increase high-net-worth clients' willingness-to-pay premium by 28%. Technical-level transparency is designed for VIP customers with differentiated services, such as granting access to blockchain hash value queries [5]. Customers can scan product RFID tags through the Chanel Member APP to trace the entire supply chain data of fibers from fishing net recovery, chemical depolymerization to spinning into cloth (including boat numbers and real-time monitoring videos from processing plants), and generate limited-edition NFT digital passports. These certificates can be embedded in virtual wardrobes within the metaverse or used as social media identity labels, driving a 34% increase in repurchase rates during the Spring 2024 VIP presale. This tiered strategy not only avoids the risk of disenchantment due to excessive transparency (mystique scores for mass markets only

dropped by 7%) but also reinforces exclusive experiences for high-end customers through technological barriers—just as the brand's supply chain director stated: “We are not selling data; we are selling an encrypted narrative of scarcity.”

5. Conclusion

5.1. Research contributions

This study fills the academic gap through a hybrid research approach and reveals the solution to the "cultural paradox" in the environmental transformation of luxury goods. Firstly, at the theoretical level, the model of "culture-technology dual-track scarcity" is proposed, breaking through the single scarcity framework of the traditional luxury value theory. The model deconstructs the narrative strategy of recycled fibers in Chanel's tweed fabric from a semiotic perspective, proving that technological scarcity (e.g., patented bio-based nylon) can be reconstructed into new cultural capital through "technological rituals" (metaverse workshop exhibition, NFT traceability certificate). Secondly, at the practical level, a "three-level traceability disclosure standard" is proposed to balance brand trust and mystery through differentiated transparency strategies: the basic level (geographic source disclosure) is oriented to the mass market, and the technical level (blockchain hash value) serves VIP customers, which has been verified in Chanel's 2023 blockchain pilot to increase the loyalty of high-end customers by 31%.

5.2. Limitations and prospects

There are still three limitations in this study: first, the sample coverage is concentrated in the Chinese market (Beijing and Shanghai), and the data of emerging luxury markets such as the Middle East are not included. Second, the depth of technical verification is insufficient, although the hypothesis of VR technology on the perception of "virtual scarcity" is proposed, but the eye tracking experiment is not verified, and it is recommended that Tobii Pro Glasses 3 be used to collect consumers' visual hotspot data in the virtual exhibition hall. Third, access to corporate data is limited, and key business data such as the details of Chanel's supply chain audit and the proportion of recycled fiber costs have not yet been disclosed, and a sustainable data sharing mechanism needs to be established through industry alliances. It is worth noting that the three paths of value reconstruction proposed in this study—the interpretation of environmental protection of traditional crafts, the empowerment of traceability stories, and the scarcity of environmental protection indicators—have been preliminarily applied in the 2024 spring/summer collection of Ordos, and the premium rate of cashmere products has increased by 22% through the "herdsmen's carbon credit traceability system", which confirms the practical value of the theoretical model.

5.3. Industry implications and future directions

For domestic Chinese brands, it is recommended to adopt a "dual-track drive" strategy: on one hand, learn from Chanel's technical narrative strategy, combining the water-saving planting techniques of Xinjiang long-staple cotton with intangible cultural heritage embroidery to create an "eco-heritage" IP; on the other hand, leverage policy dividends by integrating the "dual-carbon" goals into brand communication, such as participating in pilot projects of the Guidelines for Green Supply Chain Construction in State-owned Enterprises led by the State-owned Assets Supervision and Administration Commission [5]. Future research could delve into the following directions: firstly, developing a Luxury Sustainability Index (LSI), integrating 12 indicators including carbon footprint, material recycling rate, and craft heritage, to provide a quantitative evaluation tool for the industry; secondly, exploring the application of generative AI in symbol reconstruction, such as using Stable Diffusion to generate digital collectibles themed around "environmental conservation and heritage," testing their appeal threshold to Gen Z consumers. These explorations will drive the luxury industry from a "moral burden" to a "value engine," achieving symbiotic evolution of environmental protection and cultural heritage.

Special Opportunities in the Chinese Market:

1. Leverage intangible cultural heritage protection policies to combine traditional crafts like Miao embroidery and Yunjin with eco-friendly materials, such as the "Bamboo Fiber Yunjin" series launched by Shanghai Tang in 2023, which received special funding support from the Ministry of Culture and Tourism;

2. Respond to the "dual-carbon" goals by suggesting that groups like LVMH connect their Chinese factories to the "Green Power Traceability System," showcasing energy cleanliness through the State Grid Blockchain platform to consumers. This localized transparency strategy is more likely to gain consumer trust than international certifications (pilot results show a 18% increase in trust).

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