

A Study on the Use of Emotional Design Strategies for Sustainable Fashion Apps

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Abstract: The rapid expansion of the fast fashion industry has fueled symbolic consumption driven by the pursuit of “check-ins,” resulting in extremely low garment utilization rates. This has led to severe waste of natural resources and posed significant challenges. Persistent consumption incentives have weakened the emotional bond between people and their garments, resulting in emotional depletion. Sustainable principles advocate for rebuilding a new consumption model that integrates both environmental and emotional value. Sustainable fashion apps aim to establish a clothing community integrating recycling, upcycling, and exchange to extend garments' lifecycles. This paper explores application strategies for affective design in sustainable fashion app interfaces. Based on Donald Norman's three-level theory of affective design, it analyzes how sustainable fashion app interfaces can foster user emotional connections and enhance user experience. Effective affective design not only boosts user retention and loyalty but also subtly guides and cultivates eco-conscious consumption behaviors, thereby unifying commercial and social value.

Keywords: Emotional Design; Sustainable Fashion; App Design; Interface Design; User Experience.

1. Introduction

Faced with increasingly severe environmental challenges, growing attention is being paid to the negative impact of fast fashion on the planet's ecological resources, and the concept of sustainable fashion is gradually becoming mainstream. For instance, an increasing number of independent brands are dedicated to clothing upcycling, giving old garments new life; simultaneously, more consumers require suitable platforms to manage unused or discarded clothing while also seeking to purchase secondhand garments that retain practical value.

As in [1], within the fashion industry, communication serves as a critical medium, enabling practitioners to convey vital information—such as creative concepts and development blueprints—to clients and audiences. Against this backdrop, digital platforms (e.g., mobile applications) are increasingly becoming essential bridges connecting sustainable fashion brands with consumers. However, many sustainable fashion apps remain focused solely on functional implementation—prioritizing transaction completion and profit maximization while neglecting emotional connections with consumers. This approach fails to adequately fulfill the responsibility of conveying sustainable fashion values. Sustainable consumption behaviors often stem from deeper emotional needs—such as a sense of responsibility toward the world, the pursuit of individuality, the desire for self-expression, and the quest for quality. If sustainable fashion apps could rethink their interface design based on these emotional needs, they would likely enhance user stickiness and integrate more deeply into users' daily lives. So, how should sustainable fashion apps establish emotional connections with users through interface design, effectively communicate sustainable values, and achieve the unity of social value and commercial interests? This paper employs Donald Norman's theory of emotional design as a framework, analyzing the issue across three levels—instinct, behavior, and reflection—to provide theoretical insights for relevant design practices.

2. Core Emotional Drivers of Sustainable Fashion Consumption

As in [2], From a psychological perspective, emotional interaction is a design approach that uses information as a medium to integrate the emotions of designers, products, and users. Products can be viewed as emotional bridges between designers and consumers. Deconstructing the emotional motivations behind consumers' choices of sustainable fashion apps can provide directional guidance for the design of such apps.

2.1. Responsibility and Care

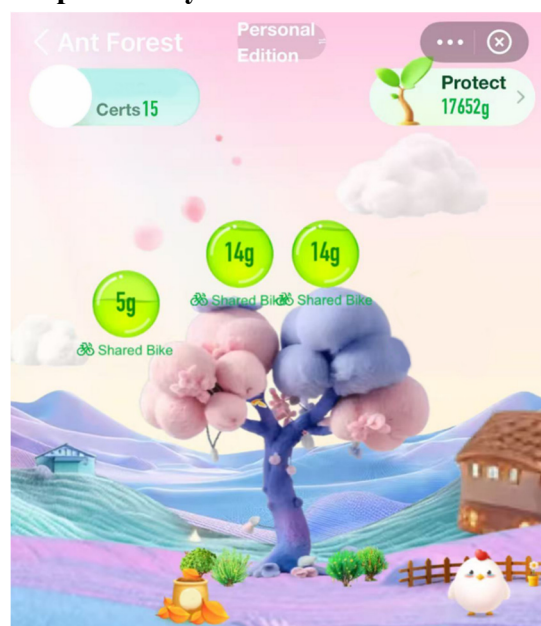


Figure 1. Ant Forest Low-Carbon Action Visualization

As in [3], Responsibility and care differ from basic emotions like joy, anger, sorrow, and pleasure; they represent a higher form of emotion. The ever-evolving trends and

market demands within the fashion industry have sparked widespread attention to resource utilization, environmental impact, and social responsibility. In recent years, environmentalists have emerged across regions, with growing numbers expressing strong concern over changes to our planet's environment. Environmental protection has become a core selling point for certain products, as consumers seek to contribute through their purchasing decisions—reducing resource waste, mitigating environmental damage, protecting animals, and opposing exploitation. Increasingly, people are demonstrating keen interest in sustainable fashion consumption. Sustainable fashion apps fundamentally address consumers' pursuit of environmental and ethical values. Through product design, we can make consumers' eco-friendly actions visible and measurable, thereby generating emotional fulfillment. Examples like Alipay's Ant Forest demonstrate this approach.

2.2. Self-Expression and Identity Formation

Sustainable consumption has emerged as a global trend, gradually evolving into a socially influential new ethos. Against this backdrop, sustainable fashion products have diversified significantly—from virtual garments in digital media and remake designs to eco-friendly materials and the growing popularity of secondhand clothing—offering consumers rich and personalized choices. Consumers not only fulfill practical needs through these products but also seek to express personal aesthetic preferences, value systems, and social identity. Consequently, purchasing sustainable fashion items has become a vital avenue for self-expression and the realization of values. Correspondingly, sustainable fashion apps serve as pivotal platforms connecting consumption with expression, offering consumers opportunities to showcase their philosophies, find like-minded communities, and engage in social interactions. This further propels the transformation of sustainable lifestyles from individual actions into a broader social movement.

2.3. Pleasant Experiences and Community Belonging

Humans are inherently social creatures, with interaction and connection being innate instincts and deep psychological needs. Within social media environments, people often seek belonging through content sharing, expressing opinions, and engaging with shared interests, forging connections with like-minded individuals. When consumers choose sustainable fashion products, they gain not only the practical satisfaction derived from the product's functional attributes but also rich emotional value through interpersonal interactions during this process. For instance, they may exchange eco-conscious philosophies, share sustainable styling tips, participate in trending discussions, or join community events through these platforms. This social experience, rooted in shared values and interests, not only strengthens consumers' identity recognition but also delivers a profound sense of belonging and psychological fulfillment. Consequently, users develop emotional attachment and long-term loyalty toward platforms that facilitate such interactive opportunities.

3. Application Strategies of Norman's Three-Level Theory of Emotional Design in Sustainable Fashion Apps

Donald Norman proposed the three-level theory of

emotional design. He believes that excellent design should evoke emotional resonance with users across three progressively deeper levels: the instinctive level, the behavioral level, and the reflective level. The instinctive level focuses on the immediate sensations evoked by a product's appearance and texture; the behavioral level emphasizes the fluidity of the usage experience and the effectiveness of its functions; the reflective level involves the sense of meaning, memories, and self-identity evoked by the product. These three levels are interconnected, collectively shaping the user's overall emotional experience with the product.

3.1. Instinctive Layer Design Strategy: Shaping a Sustainable “First Impression”

The instinctive layer refers to the most direct and primal sensory stimulation users experience during product interaction. Design delivers immediate sensory experiences through visual, tactile, and auditory channels to instantly capture attention, evoke emotional resonance, and shape a lasting “first impression.” Applying this strategy to sustainable fashion app design means clearly conveying the brand's core identity through that initial encounter. For instance, if environmental sustainability is the core concept, the design can incorporate natural colors (such as earth tones or oatmeal shades) while avoiding overly stimulating hues, creating a sense of tranquility and authenticity. Take Vestiaire Collective, Europe's largest secondhand luxury marketplace, as an example. Its interface design is remarkably minimalist, primarily using black and white with sparse bright accents to highlight key information. Authentic images showcase the items' true condition.

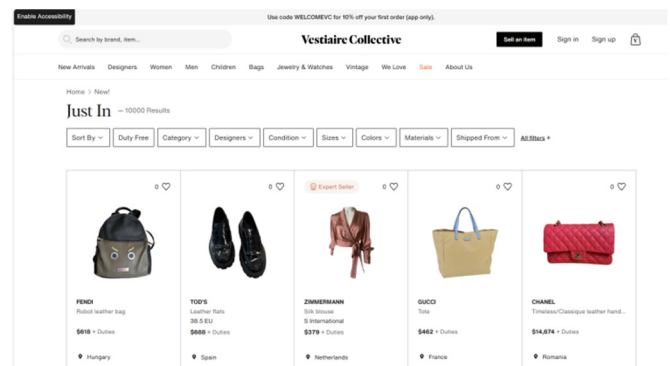


Figure 2. Vestiaire Collective website

3.2. Behavior Layer Design Strategy: Crafting Fluid, Reliable, and Pleasant Interaction Experiences

The behavioral layer pertains to the product's user experience, with its core focus on the convenience, enjoyment, and efficiency of interaction processes. As in [4], Timely and effective feedback mechanisms allow users to stay informed about their operation status at all times, enhancing their sense of control over the product or service and alleviating anxiety stemming from uncertainty. We can streamline users' core usage paths by introducing one-click publishing, offering pre-filled information, implementing intelligent category recognition and pricing suggestions, and optimizing purchase and payment workflows to reduce user burden. Furthermore, we can incorporate positive emotional feedback mechanisms. For instance, upon selling an item of clothing, display an engaging visual effect like “Your transaction reduced xx tons

of carbon emissions.” Simultaneously, we should establish transparent trust mechanisms through user real-name verification and implement a visible seller credit rating system. This ensures worry-free transactions for both buyers and sellers, making sustainable actions effortless, enjoyable, and fun.

3.3. Reflective Layer Design Strategy: Building Deep Emotional Connections and Value Alignment

As in [5], In the three-tier theory of emotional design, the highest level is the reflective layer. This layer emerges from the interplay of the first two tiers, weaving together deeper emotions, awareness, understanding, personal experiences, cultural backgrounds, and other complex factors within the consumer's psyche. The design objective at this level is to foster user identification with the platform's values, cultivating long-term loyalty and emotional connection. Its ultimate goal is to establish a strong emotional bond with users, forming a solid “value community.”

To achieve this, we can employ narrative design strategies, using stories to evoke deep emotional resonance in users. For example, the Fahlo animal conservation bracelet features a unique code allowing wearers to track the movement patterns of the endangered species they protect. At the platform level, we can build community forums providing a space for users to freely share fashion styling, trends, and remake clothing creations, enabling social interaction and knowledge exchange. The platform also offers offline experiential activities, such as upcycling workshops, to expand its influence. The system can also generate personalized growth narratives to actively engage users emotionally. By employing gamification elements like badges, levels, and titles to quantify contributions, it enhances user participation and achievement, fulfilling their need for self-actualization.



Figure 3. Fahlo Bracelet

4. Conclusion

In the future, as environmental and economic conditions evolve, sustainable fashion apps hold immense potential. Today, consumers increasingly value the emotional resonance products evoke, indicating that deeply integrating emotional design into products has become a critical factor in their success. This study systematically proposes emotional design strategies for sustainable fashion app interfaces based on Norman's three-level theory of emotional design. Successful design must transcend mere functional implementation, adopting a holistic, three-tiered approach: The instinctive layer attracts users through natural visual aesthetics, establishing initial affinity and trust; The behavioral layer eliminates barriers to sustainable consumption through seamless, reliable interactions, transforming it into a pleasurable experience; The reflective layer fosters the deepest emotional connections and value alignment with users through storytelling, community engagement, and data visualization, enabling the internalization and persistence of sustainable behaviors. This paper provides designers with a clear, systematic, and actionable design framework.

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