

Reviving Fashion: Exploring U.S. Retailers' Merchandising Strategies for Upcycled Clothing

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Background

With the public's growing concerns about the millions of tons of used clothing generated in the United States every year, more and more fashion companies have launched upcycled clothing, i.e., taking worn-out used clothing and transforming it into new and higher-value items, to meet consumers' increasing demand for sustainable apparel products (Wagaw & Babu, 2023).

Upcycling is also an emerging research topic in academia. Existing studies explored the specific clothing upcycling techniques, consumers' purchasing behavior for upcycled clothing, and the environmental impact of consuming such products (e.g., Han et al., 2017; Pandit et al., 2019; Stanescu, 2021). However, as a critical research gap, what upcycled clothing products are available in the market and U.S. retailers' related merchandising strategies remain unknown.

This study explored U.S. retailers' merchandising strategies for upcycled clothing compared with regular new garments (i.e., not upcycled). Specifically, by leveraging thousands of product-level data, the study examined U.S. retailers' detailed product assortment, design features, and pricing practices for upcycled clothing. The study's findings helped us gain more insights into the business aspect of upcycling, identify the supply gap, and provide valuable input for retailers interested in expanding into the growing upcycled clothing market.

Literature review

Theoretically, U.S. retailers' merchandising strategies for upcycled clothing could have several distinct features. **Firstly**, given the constraints in the supply of raw materials for upcycling and the smaller production scale, retailers may provide a more limited range of sizing and color options for upcycled clothing compared to regular garments (Singh et al., 2019; Kamble & Behera, 2021). **Secondly**, since upcycled clothing is crafted from used garments, this process can pose additional design challenges, potentially resulting in a reduced variety of design patterns (Cumming, 2016). **Thirdly**, due to the distinctive design and creation process, upcycled clothing may be more prevalent in specific product categories and contain particular fiber types than regular garments (Bigolin et al., 2022). **Fourthly**, as upcycled clothing primarily targets environmentally-conscious consumers, retailers could intentionally highlight upcycled clothing's sustainability features in the product labels or descriptions (Bhatt et al., 2019; Kim et al., 2021). **Additionally**, due to the customized creation process of upcycled clothing and the specialized skills required by designers, retailers may price such clothing higher than regular garments to compensate for the higher production costs (Paras et al., 2023).

Methods

Two datasets were compiled for this study. Firstly, a sample of 6,000 Stock Keeping Units (SKUs) of upcycled clothing sold in the U.S. retail market from January 2021 to December 2023 was randomly selected from EDITED, a prominent big data tool that captures U.S. retailers' apparel items for sale through web crawling techniques (EDITED, 2024). These garments explicitly featured the term "upcycled" in their product descriptions or labels. Secondly, an

additional 6,000 SKUs of regular clothing sold by the same group of retailers during the same timeframe were randomly selected from EDITED. Sampling items from retailers selling both upcycled and regular clothing would make it meaningful to compare their merchandising strategies for these two groups of products. The detailed product assortment and other essential characteristics such as design pattern, country of origin, and fiber content information were collected for each SKU.

Aligned with the research question and the categorical nature of the collected data, logistic regression was conducted to evaluate the similarities and differences between U.S. retailers' merchandising strategies for upcycled clothing versus regular garments (Tutz, 2011). The model used *Upcycled* as the dependent variable (i.e., 1=upcycled clothing; 0=regular clothing) and twenty-one independent variables measuring: 1) assortment variety (i.e., number of sizing and color options), 2) product categories (e.g., tops and bottoms), 3) product design features (e.g., plain or non-plain style), 4) fiber content (e.g., cotton and polyester), 5) sustainability features (e.g., whether highlight terms "sustainability" or "recycle" in the product description) and 6) pricing strategies (e.g., market segment and pricing).

Results and Discussions

The logistic regression was statistically significant at the 99% confidence level (likelihood ratio (L.R.) statistics =9126.3, $p < .001$). Specifically: **First**, regarding assortment, when holding other variables constant, upcycled clothing in the U.S. retail market was 10.1% less likely ($p < .001$) to include items with at least five sizing options but 2.43 times more likely to be womenswear ($p < .001$) than regular garments. **Second**, reflecting the design challenges, upcycled clothing was 2.3 times more likely to adopt the plain pattern (i.e., not using any floral, graphics, stripes, spots, and other patterns) than regular garments ($p < .001$). However, contrary to theoretical predictions, except for dresses ($p < .001$), there was no statistically significant difference ($p > .05$) in the availability of upcycled clothing compared to regular garments for most product categories, including tops, bottoms, and swimwear. **Third**, upcycled clothing for sale in the U.S. retail market was primarily made from cotton but statistically showed a lower likelihood of containing other fiber types, such as polyester, nylon, wool, viscose, spandex, and linen ($p < .001$). **Fourth**, compared with regular garments, U.S. retailers statistically were more likely to highlight upcycled clothing's sustainability attributes, including mentioning terms like "sustainable" and "recycle" in the product description ($p < .001$). **Fifth**, possibly due to higher production costs or consumers' willingness to pay a sustainability premium, U.S. retailers were statistically 11.0 times more likely to price upcycled clothing higher than the market average ($p < .001$).

Implications and future research agenda

The study's findings provided critical new knowledge about U.S. retailers' merchandising strategies for upcycled clothing and have several important implications. **First**, the results confirmed the widespread availability of upcycled clothing in the U.S. retail market and retailers' demonstrated willingness to include such products in their assortment. **Second**, the results revealed gaps in the supply of upcycled clothing and highlighted the need to enhance the variety of such products in the mainstream retail market regarding design patterns, fiber content, and depth of assortment. **Third**, the results indicate the need to lower the production costs of

upcycled clothing and ensure such “sustainable apparel products” could be financially more accessible to ordinary consumers.

Further in-depth interviews and case studies can be conducted to gain additional insights into U.S. retailers’ merchandising strategies for upcycled clothing and related factors. Exploring retailers’ product assortment and pricing strategies in other markets with growing demand for sustainable apparel products such as Europe and Asia, would also be meaningful.

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