

Jun 8th, 9:00 AM - Jun 12th, 5:00 PM

Exploring circular economy strategies in the fashion industry: a comparative case study analysis

Gabriela Fabro Cardoso
Politecnico di Milano, Italy

Alessandra Spagnoli
Politecnico di Milano, Italy

Follow this and additional works at: <https://dl.designresearchsociety.org/drs-conference-papers>



Part of the [Art and Design Commons](#)

Citation

Fabro Cardoso, G., and Spagnoli, A. (2026) Exploring circular economy strategies in the fashion industry: a comparative case study analysis, in Simeone, L., Gray, C. M., Verhoeven, A., de Götzen, A., Bakırlioğlu, Y., Zohar, H., Stead, M., and Buwert, P. (eds.), *DRS2026: Edinburgh*, 8–12 June, Edinburgh, United Kingdom. <https://doi.org/10.21606/drs.2026.2431>

This Research Paper is brought to you for free and open access by the DRS Conference Proceedings at DRS Digital Library. It has been accepted for inclusion in DRS Biennial Conference Series by an authorized administrator of DRS Digital Library. For more information, please contact library@thedrs.org.

Exploring circular economy strategies in the fashion industry: A comparative case study analysis

Gabriela Fabro Cardoso, Alessandra Spagnoli*

Politecnico di Milano, Italy

*Corresponding author e-mail: gabriela.fabro@polimi.it

doi.org/10.21606/drs.2026.2431

Abstract: The transition toward a more circular economy is closely linked to the extent to which fashion brands incorporate sustainability principles into their retail communication, and operational practices. This paper explores circularity strategies within the fashion industry through a comparative case study analysis. Data were collected through a systematic desktop review of publicly available sources, including company websites, reports, and media coverage. The analytical framework is structured around three key themes (Advocacy, Actions, and Transparency) through which brands engage consumers, implement circular operations, and communicate measurable impact specifically within the distribution and consumption phase. Additionally, the study discusses the role of Design as an enabler of circularity, influencing material choices, product longevity, and systems for reuse and recycling. Findings indicate that while advocacy and collaboration are widespread, transparency and measurable reporting remain limited. Overall, the analysis reflects a sector that is developing its retailing and engagement practices while exhibiting variability in metric standardization and disclosure.

Keywords: Circular Economy; Sustainable Fashion; Circular Strategies; Design for Sustainability.

1. Introduction

The global fashion industry largely operates on an unsustainable linear *take-make-dispose* model, driving systemic issues of overproduction, overconsumption, and excessive waste (Fletcher & Grose, 2012). This paradigm, intensified by fast fashion, is marked by rapid trend cycles and low-cost manufacturing. According to the 2023 report *Pathways to Net Zero: Circular Economy Strategies for Climate Action*, clothing production has surged by 400% over the past two decades, while garment utilization has declined by nearly 40%. This imbalance not only contributes to environmental pollution but also creates significant financial strain for brands managing excess inventory (Ellie Jin & Shin, 2020).

With regard to the promotion of a transition of the fashion industry from linear to a more circular model, the European Union (EU) occupies a fundamental position. The EU agenda acknowledges the industry's significant environmental footprint, including resource



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International Licence](https://creativecommons.org/licenses/by-nc/4.0/).

consumption and textile waste, through a coordinated, multi-dimensional policy framework (European Commission, 2022). A cornerstone of this framework is the Extended Producer Responsibility (EPR) scheme, which extends a brand's responsibility beyond the point of sale to the entire product lifecycle. Under EPR, firms make mandatory financial contributions based on the type and quantity of products placed on the market, funding collection, sorting, and recycling operations while incentivizing the design of durable, repairable, and recyclable products (European Commission, 2023a; European Commission, 2023b). Complementing EPR, the Digital Product Passport (DPP) under the Ecodesign for Sustainable Products Regulation (ESPR) provides a digital "twin" of each product, offering verifiable information on materials, origin, environmental footprint, and guidance for repair and recycling (European Parliament & Council, 2024a). Additional measures, such as the ban on incinerating unsold products and the Green Claims Directive, further enforce accountability, mitigate environmental and ethical risks, and combat greenwashing while fostering consumer trust (European Parliament & Council, 2024b).

The proposed framework aims to explore the relationship between corporate messaging and operational reality. Advocacy is the main educational touchpoint, shaping consumer perceptions and normalising circular behaviours. Actions represent the necessary tangible infrastructure, such as logistics and repair studios, to support a service-based economy. Transparency acts as the critical verification layer, ensuring that brand claims align with measurable environmental performance. By analysing these three dimensions together, this research provides a comprehensive overview of the current state of circular fashion retail, highlighting areas where the industry effectively engages consumers and where there are significant shortcomings in data disclosure.

In this sense, Collaborative Fashion Consumption (CFC) models, such as resale, renting, swapping, and leasing, are promising sustainable alternatives under emerging regulations. These models, explored by Iran & Schrader (2017), shift the focus from ownership to access, extending garment life and reducing consumption. Resale and rental are the most adopted CFC services so far (Camacho-Otero et al., 2019; Gopalakrishnan & Matthews, 2018) and are theoretically based on PSS (Goedkoop et al., 1999; Vezzoli, 2017). However, according to Tukker (2015), the environmental benefits of such product-service system models are not guaranteed unless they are specifically designed with Circular Economy goals.

Within this context, this paper analyses circular strategies and best practices through the lens of an analytical framework, structured around three themes: Advocacy, Actions, and Transparency, across 66 CFC brands and platforms. Through a systematic review of publicly disclosed information, this study evaluates how brands implement measures that enable circularity and offers a deeper understanding of how systemic policy interventions interrelate with the strategies of brands to drive forward a more transparent, accountable, and sustainable fashion system. A core driver for this research is investigating the authenticity of sustainability claims and initiatives within the evolving retail market. Although many brands take part in both advocacy and operational activities, it remains relevant to understand how much such commitments are backed by verifiable and transparent data.

2. Conceptual Background

2.1 Sustainable Challenges within the Fashion Industry

As mentioned previously, the global fashion industry is characterized by rapid cycles of production and consumption and high material usage, hence producing a lot of waste (Rotimi et al., 2021). Fast fashion, characterized by rapid trend turnover and low-cost production, has received widespread criticism for its environmental and social impacts, reinforcing global inequalities (Battisti & Spennato, 2024; Bick et al., 2018). These problems cannot be fixed without considering alternatives to the linear *take-make-dispose* economic model and analysing how technological, social, and economic forces together influence the fashion industry.

Some dynamics are evident in shifting market and cultural trends. Fashion's emphasis on novelty, accelerated by social media, coexists with heightened price sensitivity: in 2024, 64% of US consumers traded down, and over 70% plan to continue using off-price channels regardless of financial improvement. Nearly one-third purchase "dupes" of premium goods, pushing brands to clarify their value propositions or engage in alternative markets such as resale, expected to reach 10% of global apparel sales by 2025 (State of Fashion, 2025).

Furthermore, accountability remains limited. The Fashion Transparency Index 2023 reports an average disclosure score of just 26% across 250 major brands. While half reveal first-tier suppliers, only 12% identify raw material suppliers, and only 1% disclose living-wage data, underscoring persistent transparency gaps. Decarbonization progress is similarly slow: 63% of brands are behind on 2030 targets, and sustainability has fallen as an executive priority. A strong consumer price-sustainability gap deepens this inertia. With apparel consumption predicted to rise 63% to 102 million tonnes by 2030, the sector risks using over a quarter of the global carbon budget by 2050. A dual focus on profitability and sustainability, supported by larger investments in scalable low-impact materials, is essential (State of Fashion, 2025).

From a European perspective, textiles generate some of the highest environmental pressures. The EEA and ETC CE's Circularity Metrics Lab shows EU textile waste holding steady at around 16 kg per person annually. Besides that, only 15% of textiles and shoes were separately collected in 2022, leaving 85% mixed with municipal waste and largely unrecoverable. Including this mixed stream, 73% of discarded textiles ended up in landfill or incineration. Even within separately collected volumes, 26% met the same fate. Reuse accounted for only 2.3 kg per person in 2021, about 13% of new textile consumption.

Furthermore, the EU exported roughly 1.4 million tonnes of used clothing in 2023, mirroring the quantity of processed domestic textile waste and underscoring reliance on foreign sorting. With mandatory separate textile collection taking effect in 2025, capture volumes will rise, but without rapid expansion of domestic processing capacity, exports, and the risk of exported waste being landfilled or incinerated, are likely to increase (ETC CE Report, 2025).

2.2 Emerging Forms of Retail: Collaborative Consumption Models

Retail practices are moving away from traditional ownership-based consumption toward more sustainable models (Berman et al., 2018). Emerging retail formats are increasingly

positioned as enablers of circular practices within the fashion value chain (Cao, 2019; Iannilli & Linfante, 2022). By reshaping how fashion is delivered, experienced, and enjoyed, these models act as catalysts for a shift toward a more sustainable paradigm (Casini & Rocchetti, 2022).

In the context of evolving retail models, the fashion industry is progressively adopting collaborative consumption as a means to enhance sustainability. This socio-economic approach prioritizes access over ownership and includes business models such as renting, sharing, and resale (Bhardwaj & Mohapatra, 2023; Iran & Schrader, 2017). Instead of purchasing new garments, consumers might rent designer pieces for special occasions or subscribe to services that allow seasonal wardrobe exchanges. These practices can potentially curb the demand for new clothing and extend product lifespans, directly addressing waste and overproduction linked to conventional fast fashion (Ratchford et al., 2023; Ribeiro & Maués, 2023). Platforms like Rent the Runway, The RealReal, and Vestiaire Collective have brought these models into the mainstream, demonstrating that shared fashion is not a just niche trend, but a growing market driven by sustainability values and the appeal of accessing more for less. Such shifts reconfigure the consumer–product relationship from the linear “buy-use-discard” pattern to a more circular model grounded in efficiency and sustainability (Verhoef et al., 2015).

This transition into a more circular paradigm is exemplified by models of Collaborative Fashion Consumption (CFC), which redefine the consumer-product relationship by prioritising access and utilisation over physical possession. CFC models (e.g. rental, swapping, and resale) are critical mechanisms for prolonging the lifespan of garments and decelerating consumption (Arrigo, 2021; Iran & Schrader, 2017). CFC models are theoretically anchored in Product-Service Systems (PSS), a business model that satisfies user needs by bundling products with combined services (Beuren et al., 2013; Vezzoli et al., 2015). The implementation of PSS has given rise to a range of services, including rental, repair, customisation, and take-back systems, with the overarching objective being to prolong the lifespan of clothing items and to mitigate levels of waste (Vezzoli et al., 2022). However, it is a crucial theoretical premise that PSS models do not inherently guarantee sustainable benefits; they must be specifically designed with Circular Economy (CE) goals in mind to deliver radical environmental transformation (Foroozanfar et al., 2022; Tukker, 2015). PSS Design and CFC services are integrated during the final phases of the supply chain, namely distribution and consumption. This places Retail Design at the forefront of enabling systemic change.

2.3 The Role of Design in Enabling Circularity

Design plays a central role in encouraging more sustainable practices, particularly within Collaborative Fashion Consumption (CFC) models. Beyond aesthetics, Design functions as a strategic tool guiding brands and consumers toward environmentally conscious decisions (Garcia-Torres et al., 2022). Designers therefore hold both the opportunity and responsibility to create interventions that promote extended product use, emotional durability, and participation in circular practices.

In the early stages of the fashion supply chain (concept development, material selection, and assembly) design choices are valuable. Material quality, pattern development, and construction determine garment longevity and fit, helping prevent premature disposal.

Ethical production practices during modelling and sewing (Lee & Huang, 2020) also strengthen transparency and foster consumer trust. Yet Design's influence extends beyond production, as the later stages of the fashion supply chain are increasingly recognized as essential for transitioning fashion toward a circular system.

At these final stages (distribution and consumption), Product-Service Systems (PSS) Design intersects with CFC services to shift fashion from a linear *take-make-dispose* model toward service-based circularity. As an emerging field, PSS Design offers tools for rethinking fashion services (Afief et al., 2021; Johnson & Barlow, 2021; Lang & Armstrong, 2018; Pal, 2016). By enabling access over ownership, PSSs Design support reuse, recycling, and value creation from existing products. As a result, brands increasingly combine multiple circular strategies rather than relying on single interventions, with effectiveness depending on consistent implementation.

Another key concept in this shift is Design for Longevity, which focuses on extending product lifespan through durable materials, proper fit, clear care instructions, and modular or repairable features (Carlsson et al., 2021). Emotional attachment, flexible design, and business models that maximize active use further contribute to long-term value. Integrating these principles into retail strategies helps create holistic circular systems in which sustainable brand values are reinforced at every consumer touchpoint.

3. Methodology and Analytical Framework

The research methodology applied in this study is a comparative case study analysis, as defined by Creswell & Creswell (2018). This approach enables a systematic review of the strategies and practical applications employed by companies currently operating in the circular fashion sector, specifically within the European and North American contexts.

The dataset was constructed through a targeted search strategy using keywords associated with Collaborative Fashion Consumption (CFC), including "fashion rental," "resale platforms," "garment repair services," and "take-back schemes." To ensure methodological rigor, specific inclusion and exclusion criteria were established: brands were included if they operated a documented circular business model within the target regions and provided accessible sustainability or operational disclosures. Organizations focusing solely on primary production without a clear post-consumer service component were excluded.

The comparative analysis concluded after 66 cases were evaluated. This sample size was determined by the principle of theoretical saturation; the research verified that evaluating additional cases beyond this threshold did not reveal new or distinct circular strategies within the defined scope. This stopping point ensures that the findings are representative of dominant market strategies.

Data collection was conducted via a systematic desktop analysis of publicly available information. Primary sources included official company websites, annual sustainability and ESG reports, and verified industry news articles. While this method allows for a broad sectoral overview, it is important to acknowledge the analytical limitations of relying on publicly disclosed data. This study measures "Advocacy, Actions, and Transparency" as they are articulated and communicated by the brands themselves.

Consequently, the findings reflect reported activities and strategic positioning rather than an independent verification of operational effectiveness or longitudinal environmental impact.

The data collection process culminated in a summary table (Table 1) listing the catalog of practices reviewed. This table serves as a condensed synthesis of a more extensive dataset; the complete version, containing the full set of variables and case-specific details, has been omitted to prioritize document readability and thematic synthesis.

BRAND/PLATFORM	SUSTAINABLE COMMITMENT								
	ADVOCACY			ACTIONS				TRANSPARENCY	
	Workshops & Webinars	Influencer Partnerships	Content Marketing	Financial support	Collaboration	Loyalty Programs	Infrastructure Enhancement	Visual Dashboards	Labeling & Product Information Annual Reports
Armoire		x	x		x	x	x		x
BieBy									
Bundlee		x	x		x	x	x		x
By Rotation		x	x		x	x	x		
Camicia On Demand	x	x	x		x	x	x		
CircOS / Circos	x	x	x		x	x	x	x	x
Cloov	x	x	x		x		x	x	x
Cocoon	x	x	x			x	x		
Continued Fashion	x	x	x	x	x		x	x	
Cuyana	x	x	x		x	x	x	x	x
Depop	x	x	x		x	x	x	x	x
Dresscoded		x	x		x	x	x		
DressYouCan	x	x	x		x	x	x		
Drexcode		x	x		x	x	x		
Dropkid	x	x	x		x	x	x	x	
Eileen Fisher Renew	x	x	x	x	x	x	x	x	x
Endless Wardrobe	x	x	x		x	x	x		x
Fashion for Good	x	x	x	x	x		x	x	x
For Days	x	x	x		x	x	x	x	x
Front Row	x	x	x		x	x	x		
Ganni — Ganni Repeat	x	x	x	x	x	x	x	x	x
GOAT	x	x	x		x	x	x	x	x
GreenStitch	x		x		x	x	x	x	x
Gwynnie Bee	x	x	x		x	x	x		x
H&M Pre-Loved	x	x	x		x	x	x		
Hesse	x	x	x		x	x	x		x
HURR	x	x	x		x	x	x	x	x
Kidizen	x	x	x		x	x	x		
Lindström	x	x	x		x	x	x	x	x
Loan the Look	x	x	x		x	x	x		
Luxury Garage Sale	x	x	x		x	x	x		
MEWA	x	x	x		x	x	x	x	x
ModLux.Rent	x	x	x		x	x	x		x
My Wardrobe HQ	x	x	x		x	x	x		x
Nike Refurbished		x	x		x	x	x	x	x
Nu Wardrobe	x	x	x		x	x	x	x	x
Nudie Jeans	x	x	x		x		x	x	x
Nuuly (URBN rental)	x	x	x		x	x	x		x
Pre-Loved at Selfridges	x	x	x		x	x	x		
Re-Uniqlo	x	x	x		x	x	x		x
RE.STATEMENT	x	x	x		x	x	x		x
Rebag	x	x	x		x	x	x	x	x
Recurate	x	x	x	x	x		x	x	x
Reflaunt	x	x	x	x	x		x	x	x
Rent the Runway	x	x	x		x	x	x	x	x
Revest	x	x	x		x	x	x		x
Rites (Rites London)	x	x	x		x	x	x		x
Rotaro	x	x	x		x	x	x	x	x
ShareMyBag	x	x	x		x	x	x		x
Sisterly	x	x	x		x	x	x		x
Style Lend	x	x	x		x		x	x	x
The Devout	x	x	x		x	x	x		x
The RealReal	x	x	x		x	x	x	x	x
The Sew	x	x	x		x	x	x		x
The Swap Society	x	x	x	x	x	x	x	x	x
ThredUP	x	x	x		x	x	x	x	x
Trashie	x		x	x	x		x	x	x
Trove	x	x	x	x	x	x	x	x	x
Tulerie	x	x	x		x	x	x	x	x
UpChoose (Upchoose)	x	x	x		x	x	x		x
Vestiaire Collective	x	x	x		x	x	x	x	x
Vinted	x	x	x		x	x	x	x	x
Vivrelle	x	x	x		x	x	x		x
Worn Wear (Patagonia)	x	x	x	x	x	x	x	x	x
Zalando Second Hand		x	x		x	x	x		
Zara Pre-Owned	x	x	x		x	x	x		

Figure 1 List of Brands and Platforms Studied (Elaborated by the Author, 2025)

The analytical framework delineates the foundation employed to assess the circular strategies and best practices observed among the investigated brands and platforms.

The analysis is built upon three interconnected themes of circularity-enabling actions (Advocacy, Actions, and Transparency), each of which captures a distinct dimension of effective circular economy implementation within the fashion sector. This framework provides a structure for the comparative analysis of the presence or absence of specific activities across the studied cases.

The first theme, **Advocacy**, describes the mechanisms by which brands actively inform and encourage consumers to adopt more sustainable attitudes. The sub-points defining Advocacy capture the different modalities through which this encouragement occurs, including:

- Workshops & Webinars: Structured educational programs and events designed to welcome customers to become more circular.
- Influencer Partnerships: Collaborations designed to leverage support, which can include celebrity-driven campaigns to normalize renting and resale, or peer-to-peer marketing strategies.
- Content Marketing: The widespread use of digital communication channels, such as blogs, social media, and newsletters, to promote the advantages of circular practices and communicate sustainability values.

Next, the **Actions** theme was placed to capture the real investments and physical actions undertaken by brands. This category is essential for determining tangible commitments, such as the rationalization of supply chains or the collaboration with other industry players to successfully scale up circular solutions. This theme is further defined by four sub-points focusing on operational and economic commitment:

- Financial Support for circular solutions: This assesses whether companies provide direct grant schemes or external sustainability project funding.
- Supply chain Collaboration: This measures the willingness of brands to partner with various co-players, such as laundries, recyclers, designers, and retailers, to enhance and upscale circular services.
- Loyalty Programs: This captures mechanisms, such as membership or subscription programs, that serve as the main vehicle for consumer loyalty.
- Infrastructure Enhancement: This accounts for the development and investment in the necessary physical and logistical systems, such as strong logistics, cleaning systems, take-back programs, and green packaging.

Finally, the **Transparency** theme was utilized to determine how brands effectively build trust and mitigate the risk of greenwashing. Transparency ensures brands have real proof of their impacts, addressing a top concern for both EU policymakers and consumers. This

theme moves beyond qualitative messaging to assess the provision of measurable, quantified data. The specific elements analyzed under Transparency include:

- Visual Dashboards showing environmental savings: This assesses whether brands provide consumer-facing dashboards with live impact data, such as carbon or water savings.
- Product Labelling for recyclability or sustainability: This captures efforts to provide clear, actionable information about a product's end-of-life status or sustainable attributes.
- Annual Reports on consumer behaviors and sustainability impacts: This measures whether companies utilize formal reporting mechanisms, such as multi-year impact or sustainability reports, rather than relying solely on isolated claims or broad statements.

4. Findings

The case study analysis established that the circular fashion sector is committed to advocacy, education, and community work, although the scale and precise nature of these activities vary significantly among brands and platforms. Companies such as Eileen Fisher Renew and Swap Society run an effective, active educational program, characterized by organizing workshops and events aimed at helping customers go more in a circular direction. Other brands limit themselves to online content distribution or rare on-site activities. This range in commitment clearly indicates that while the industry recognizes the importance of educational outreach, its consistent execution has yet to be standardized across the whole sector.

Another key aspect that underpins the communication strategy in this space is influencer and community partnerships. Larger, more established platforms, such as Rent the Runway, Ganni, and The RealReal, are heavily leveraging celebrity-fronted campaigns and strategic editorial placements to help normalize renting and resale to the wider consumer market. Peer-to-peer marketplaces like By Rotation and ShareMyBag are, meanwhile, focusing more on peer-to-peer marketing and the development of local communities, intentionally forgoing high-profile celebrity endorsement in favor of a more grassroots approach. This blend of both top-down and bottom-up support indicates the range of tactics leveraged to activate consumers within circular fashion models.

A practice adopted by almost all studied brands is content marketing aimed at communicating core sustainability values. Digital channels, including company websites, blogs, newsletters, and social media platforms, are highly utilized to communicate the distinct value proposition of rental and resale opportunities. The most notable observation, however, is the apparent dichotomy between qualitative communications of messaging and quantified impact reporting. Very few companies provide verifiable and measurable environmental impacts, such as actual carbon or water savings. Even fewer, including Nu Wardrobe, which has integrated a carbon calculator, offer consumer-facing dashboards showing live impact data. At the leading edge, ThredUP, The RealReal, Eileen Fisher Renew,

and Lindström issue formal multi-year impact or sustainability reports as part of their normal course of business.

In terms of economic and infrastructure investment in circularity, few companies provide direct grant schemes or external funding for sustainability projects. Most invest their capital by reinvesting directly into their own operations. This strategic focus is to develop internal systems, including logistics, sophisticated cleaning processes, efficient take-back programs, and sustainable green packaging. For Days was unique in publishing open and transparent recycling data in conjunction with its closed-loop take-back program. Eileen Fisher Renew was another exemplary model in publishing transparent documentation of take-back logistics, specialized internal repairing studios, and dedicated resale channels, rigorously supported by formal Benefit Corporation reporting.

Supply chain collaboration is a strong, recurring trend. Brands continue to prove themselves willing to actively collaborate with various co-players such as laundries, recyclers, designers, and retailers in efforts to upscale their circular services. Business-to-business platforms such as Reflaunt, Recurate, Trove, and Cloov demonstrably fulfill a crucial facilitating function—they pave the way for and make it easier for other companies to establish or manage their own resale, rental, and repair programs with ease. While these external suppliers often form the technical backbone of circular product services, they rarely publish their own sustainability information publicly.

In terms of customer relationships, consumer loyalty for all the brands studied is primarily managed through membership or subscription schemes, which incentivise repeated consumption, rather than relying on financial rewards directly linked with sustainable behaviours. The peer-to-peer businesses, particularly, like By Rotation and ShareMyBag, apply strong reputation and community mechanisms as enablers of repeated use, which underlines the experimental character of loyalty schemes at large in the industry.

On the whole, the analysis shows a sector particularly focused on impactful messaging, strategic partnerships, and building key operational infrastructure. However, it highlights at the same time a large gap in terms of the need for standardized reporting and the wide adoption of transparent consumer-facing metrics. While internal investments into core infrastructure—especially logistics, laundering, and packaging—are widespread, their contribution is rarely reported with measurable performance metrics. Furthermore, despite the fact that B2B platforms play an instrumental role in scaling circular solutions, their own sustainability information remains largely proprietary. This overall lack of quantitative transparency creates a clear, actionable opportunity for both brands and platforms to radically increase their credibility and reinforce consumer trust through the adoption of formalized reporting, open impact dashboards, and the strategic introduction of new, efficient incentives for sustainable consumer behaviours.

5. Discussion and Conclusions

The findings of the study are structured around the themes of Advocacy, Actions, and Transparency. These themes show both successes and challenges in the application of PSS strategies to circular fashion retail models. In terms of Actions, a majority show commitment toward the physical infrastructure being developed for PSS models that ensure access by

way of rental, resale, subscription, repair, or take-back services. Companies usually invest in internal systems, including logistics, advanced laundering processes, take-back programs, and sustainable packaging, necessary for a functional PSS. For example, Eileen Fisher Renew exemplifies the intentional design of PSS through dedicated repair studios and take-back logistics that extend the garment life phase. Brands are increasingly collaborating with recyclers, laundries, and B2B platforms such as Trove and Reflaunt to scale circular services and make the management and implementation of rental, resale, and repair systems easier. This shows that companies are successfully establishing the operational bases of PSS models, so business can shift from the linear *take-make-dispose* system to service-based circularity.

PSS Design also has a strategic role in guiding consumer behaviour at the retail and use stages. Active education of circular practices through mechanisms such as advocacy via workshops, webinars, and content marketing informs and encourages consumers to adopt circular behaviours. Influencer and community-building initiatives, as exemplified by platforms including Rent the Runway and By Rotation, normalize renting and resale, two core CFC models rooted in PSS theory that favour access over ownership. Brands are creating consistent and engaging experiences that encourage extended use and participation in circularity by incorporating elements of PSS, such as communication around repair and product take-back.

Despite these developments, transparency remains one of the significant challenges, most initiatives do not have verifiable data that could show environmental impact. While operational investments and advocacy are common, few brands publish quantitative metrics on carbon savings, water reduction, or other measurable impacts, while the sustainability data for many B2B platforms remains proprietary. Without formal reporting and open impact dashboards, the actual effectiveness of the PSS models to realize Circular Economy goals remains uncertain. Improving transparency will thus be essential not only to verify the environmental benefits but also to avoid greenwashing, in line with EU policy measures such as the DPP, aiming to make verified product information available to consumers, regulators, and supply chain actors.

In conclusion, the study utilised a comprehensive analytical framework encompassing workshops, influencer collaborations, and take-back programmes, to provide actionable insights for enhancing the Design of circular retail models and enhancing transparency, accountability, and resource efficiency within the fashion system. Nevertheless, it is important to acknowledge the limitations of this study. Firstly, the review of circular strategies across the 66 brands and platforms was based exclusively on a desktop review of publicly disclosed information. The data were collected from primary public sources only, including official company websites, sustainability reports and relevant news coverage. It is possible that this may not reflect all internal practices or unreported initiatives. Secondly, the geographical scope of the study was confined to companies operating within Europe and North America. Consequently, findings cannot be readily generalised beyond these regions, given the significant variations in regulatory frameworks, market conditions and cultural contexts. Consequently, while this study provides a comprehensive comparative analysis of circular fashion practices in these regions, it is important to note that the results may not fully capture the global diversity of strategies implemented.

These results emphasize the significance of Product-Service System (PSS) design in enabling the fashion sector to transition into the functional economy. The 'Action' group highlighted

that successful circular brands don't make repairs and resales peripheral add-ons but instead integrate them as key value propositions that fundamentally disrupt the 'retail space' as traditionally defined. From the point of Retail Design, this means that brands need to rethink the physical and digital infrastructure of commerce to prioritize 'return logistics' and education over traditional high-volume display. By designing for longevity through PSS design, brands can break the link between economic growth and resource use; however, as our 'Transparency' group identified, this is the last barrier to full implementation.

Acknowledgements: The research has been carried out within the PRIN 2022 PNRR 'RHITA' project, funded by the European Union – NextGenerationEU, under the National Recovery and Resilience Plan (NRRP) Mission 4 Component 2, Project Code: P20225PHBW; CUP: D53D23019500001.

6. References

- Afief, N. F., Gabriel, D. S., & Farizal, F. (2021). Proposed Criteria to Design a Product-Service System Based Circular Business Model for the Apparel Industry. *ACM Int. Conf. Proc. Ser.*, 340–347. <https://doi.org/10.1145/3468013.3468368>
- Arrigo, E. (2021). Collaborative consumption in the fashion industry: A systematic literature review and conceptual framework. *Journal of Cleaner Production*, 325, 129261. <https://doi.org/10.1016/j.jclepro.2021.129261>
- Battisti, J., & Spennato, A. (2024). Fashioning inequality: The socioeconomic implications of fast fashion's global reach. *Fashion Highlight*, 3, 18–25. <https://doi.org/10.36253/fh-2708>
- Berman, B., Evans, J. R., & Chatterjee, P. (2018). *Retail management: A strategic approach* (Thirteenth edition). Pearson.
- Beuren, F. H., Gomes Ferreira, M. G., & Cauchick Miguel, P. A. (2013). Product-service systems: A literature review on integrated products and services. *Journal of Cleaner Production*, 47, 222–231. <https://doi.org/10.1016/j.jclepro.2012.12.028>
- Bhardwaj, P., & Mohapatra, S. (2023). OMNI Channel: Is It Really Omni? *Asian Journal of Management Cases*, 09728201231169871. <https://doi.org/10.1177/09728201231169871>
- Bick, R., Halsey, E., & Ekenga, C. C. (2018). The global environmental injustice of fast fashion. *Environmental Health*, 17(1), 92. <https://doi.org/10.1186/s12940-018-0433-7>
- Cao, L. (2019). Implementation of Omnichannel Strategy in the US Retail: Evolutionary Approach. In W. Piotrowicz & R. Cuthbertson (A c. Di), *Exploring Omnichannel Retailing* (pp. 47–69). Springer International Publishing. https://doi.org/10.1007/978-3-319-98273-1_3
- Carlsson, S., Mallalieu, A., Almefelt, L., & Malmqvist, J. (2021). Design for longevity - a framework to support the designing of a product's optimal lifetime. *Proceedings of the Design Society*, 1, 1003–1012. <https://doi.org/10.1017/pds.2021.100>
- Casini, L., & Roccetti, M. (s.d.). Fashion, Digital Technologies, and AI. Is the 2020 Pandemic Really Driving a Paradigm Shift? 10(2), 1–10. <https://doi.org/10.6092/issn.2611-0563/11802>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE.
- Duhoux, T., Smeets, A., Kress, L., & Mortensen, L. F. (2025). *ETC CE Report 2025/7: Measuring Europe's textiles circularity – through the lenses of the EEA Circularity Metrics Lab. European Topic*

- Centre on Circular Economy and Resource Use (ETC CE). <https://www.eionet.europa.eu/etcs/etc-ce/products/etc-ce-report-2025-7-measuring-europe2019s-textiles-circularity-2013-through-the-lenses-of-the-eea-circularity-metrics-lab>
- Ellie Jin, B., & Shin, D. C. (2020). Changing the game to compete: Innovations in the fashion retail industry from the disruptive business model. *Business Horizons*, 63(3), 301–3011. <https://doi.org/10.1016/j.bushor.2020.01.004>
- Environmental Defense Fund. (2023, December 11). *Pathways to Net Zero: Circular economy strategies for climate action*. <https://business.edf.org/insights/pathways-to-net-zero-circular-economy-strategies-for-climate-action/>
- European Commission, Directorate-General for Environment. (n.d.). *Circular economy. European Commission*. Retrieved September 30, 2025, from https://environment.ec.europa.eu/strategy/circular-economy_en
- European Commission. (2022). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU Strategy for Sustainable and Circular Textiles (COM(2022) 141 final)*. EUR-Lex. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52022DC0141>
- European Commission. (2023a). *Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste (COM(2023) 420 final)*. EUR-Lex. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=COM:2023:420:FIN>
- European Commission. (2023b). *Questions and Answers on the Proposal for an Extended Producer Responsibility for Textiles and Food Waste Reduction*. European Commission Press Corner. Retrieved from https://www.google.com/search?q=https://ec.europa.eu/commission/presscorner/detail/en/QA_NDA_23_3638
- European Parliament & Council. (2024a). *Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products (ESPR)*. EUR-Lex. Retrieved from <https://eur-lex.europa.eu/eli/reg/2024/1781/oj/eng>
- European Parliament & Council. (2024b). *Directive (EU) 2024/825 of the European Parliament and of the Council of 13 March 2024 on empowering consumers for the green transition through better protection against unfair practices and better information*. EUR-Lex. Retrieved from <https://eur-lex.europa.eu/eli/dir/2024/825/oj>
- Fashion Revolution. (2023). *Fashion transparency index 2023: How transparent are 250 of the world's largest fashion brands?* <https://www.fashionrevolution.org/fashion-transparency-index/>
- Fletcher, K., & Grose, L. (2012). *Fashion and sustainability: Design for Change*. Laurence King.
- Foroozanfar, M. H., Imanipour, N., & Sajadi, S. M. (2022). Integrating circular economy strategies and business models: A systematic literature review. *Journal of Entrepreneurship in Emerging Economies*, 14(5), 678–700. <https://doi.org/10.1108/JEEE-10-2021-0411>
- Garcia-Torres, S., Rey-Garcia, M., Sáenz, J., & Seuring, S. (2022). Traceability and transparency for sustainable fashion-apparel supply chains. *Journal of Fashion Marketing and Management*, 26(2), 344–364. <https://doi.org/10.1108/JFMM-07-2020-0125>
- Iannilli, V., & Linfante, V. (2022). Exploring disrupting scenarios in the fashion retail and communication paradigms. *Luxury Studies: The In Pursuit of Luxury Journal*, 1.

- Iran, S., & Schrader, U. (2017). Collaborative fashion consumption and its environmental effects. *Journal of Fashion Marketing and Management*, 21(4), 468–482. <https://doi.org/10.1108/JFMM-09-2016-0086>
- Johnson, M., & Barlow, R. (2021). Defining the Phygital Marketing Advantage. *J. Theor. Appl. Electron. Commer. Res.*, 16, 2365–2385. <https://doi.org/10.3390/jtaer16060130>
- Lang, C., & Armstrong, C. M. J. (2018). Fashion leadership and intention toward clothing product-service retail models. *Journal of Fashion Marketing and Management*, 22(4), 571–587. <https://doi.org/10.1108/JFMM-12-2017-0142>
- Lee, S. H., & Huang, R. (2020). Exploring the motives for online fashion renting: Insights from social retailing to sustainability. *Sustainability* (Switzerland), 12(18). <https://doi.org/10.3390/su12187610>
- McKinsey & Company. (2025). The state of fashion 2025: ... [Report]. McKinsey & Company. <https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2025/the-state-of-fashion-2025-v2.pdf>
- Pal, R. (2016). Extended responsibility through servitization in PSS: An exploratory study of used-clothing sector. *Journal of Fashion Marketing and Management*, 20(4), 453–470. <https://doi.org/10.1108/JFMM-12-2015-0100>
- Ratchford, B., Soysal, G., & Zentner, A. (2023). Multichannel customer purchase behavior and long tail effects in the fashion goods market. *Journal of Retailing*, 99(1), 46–65. <https://doi.org/10.1016/j.jretai.2022.06.007>
- Ribeiro, L., & Maués, A. (2023). Traditional Brands vs. Born-Digital Brands: The Case of the Fashion Industry. In F. J. Martínez-López (A c. Di), *Advances in Digital Marketing and eCommerce* (pp. 298–304). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-31836-8_29
- Rotimi, E. O. O., Topple, C., & Hopkins, J. (2021). Towards A Conceptual Framework of Sustainable Practices of Post-consumer Textile Waste at Garment End of Lifecycle: A Systematic Literature Review Approach. *Sustainability*, 13(5), 2965. <https://doi.org/10.3390/su13052965>
- Tukker, A. (2015). Product services for a resource-efficient and circular economy – a review. *Journal of Cleaner Production*, 97, 76–91. <https://doi.org/10.1016/j.jclepro.2013.11.049>
- Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From Multi-Channel Retailing to Omni-Channel Retailing. *Journal of Retailing*, 91(2), 174–181. <https://doi.org/10.1016/j.jretai.2015.02.005>
- Vezzoli, C., Ceschin, F., Diehl, J. C., & Kohtala, C. (2015). New design challenges to widely implement ‘Sustainable Product–Service Systems’. *Journal of Cleaner Production*, 97, 1–12. <https://doi.org/10.1016/j.jclepro.2015.02.061>
- Vezzoli, C., Conti, G. M., Macrì, L., & Motta, M. (2022). *Designing Sustainable Clothing Systems The design for environmentally sustainable textile clothes and its Product-Service Systems*. FrancoAngeli.

About the Authors:

Gabriela Fabro Cardoso PhD Candidate, Design Department, Politecnico di Milano. Her research interests include design practices that help transform the fashion system into a more sustainable paradigm and new sustainable retail models linked to community-driven consumption dynamics.

Alessandra Spagnoli. PhD, Associate Professor and faculty member, Design Department, Politecnico di Milano. Her research interests concern the management of design-driven processes in the field of CCI, and the exploration of new technologies and sustainable services in the retail design domain.