

Article

Challenges and Responsibilities in Service-Based Sustainable Fashion Retail: Insights and Guidelines from a Qualitative Study

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Abstract

Sustainable fashion retail is associated with supporting circular economy processes through the provision of services that extend the duration of products, their components, and their materials. Considerable attention has been paid to environmental concerns, whereas comparatively less emphasis has been placed on the cultural and social dimensions that retail may facilitate. The presented research contributes to the ongoing discourse related to service-based retail by formulating guidelines that consider environmental, cultural and social aspects of sustainability. To achieve this goal, a literature review was conducted to identify trends, existing models, and to extract components of service-based sustainable fashion retail. Subsequently, a focus group was organised with experts from the fashion retail sector to gather opinions on retail and its relationship with sustainability. A systematic mapping of service-based retail initiatives was employed within the focus group as a tool to stimulate experts' expertise and encourage them to anticipate the challenges and responsibilities associated with a service-based fashion retail model. Results from the focus group and literature review are discussed and combined to formulate guidelines on credibility and engagement components. Five guidelines were identified: (1) aim at transparency, (2) adopt digitisation and technological solutions, (3) offer immersive experiences and community building in the store, (4) enhance human resources, and (5) pragmatically communicate sustainability efforts. This research, viewing the fashion and textile industries through the lens of the European market, provides companies, designers and policymakers with strategic insights to navigate the complex and evolving fields of fashion and textiles.



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Keywords: sustainable fashion retail; service-based retail; focus group; strategic insights; conceptual framework; circular economy; environmental sustainability; transparency; social impact; sustainability culture

1. Introduction

As one of the most impactful industries, fashion must rethink its business models to reduce its environmental and social footprint. The transition toward sustainability is influenced by various factors, including institutional and political frameworks and growing consumer interest in sustainability-marketed products [1]. Sustainability has been described as the “*mantra for the 21st century*” [2]. The concept is inherently complex and multidimensional, which makes it challenging to establish a single, universally accepted definition [3]. Broadly, sustainability encompasses the pursuit of socioeconomic equity while safeguarding the natural environment and cultural heritage for future generations [2]. Among the various available conceptualisations, the model of the three pillars of sustainability, derived from Elkington’s *Triple Bottom Line* framework (TBL) [4], has gained the

greatest recognition [2,3,5]. This model states that the sustainability of any system depends on the balanced integration of three interrelated dimensions: economic, environmental, and social.

Regulations released at the European level, including the Circular Economy Action Plan (March 2020), the Strategy for Sustainable and Circular Textiles (March 2022), and the Ecodesign for Sustainable Products Regulation (July 2024), request that the EU fashion and textile industry improves sustainability standards, shifting from a *linear economy model*, also known as cradle-to-grave or take-make-dispose, to a *circular economy model*, also known as cradle-to-cradle or closed loop economy [6–9]. Although it is generally assumed that 70–80% of a product's total environmental impact is determined in its design phase [10], the implementation of the circular economy offers new possibilities to make fashion and textiles less impactful.

In the context of the circular economy, alternative consumption models emerged. In particular, product-service systems [11,12], collaborative consumption models [13–15], and the recovering or recycling of components and materials [9,16]. The increasing focus on circularity that can be observed at the urban level [17] requires retailers to play a proactive role in the sustainability transition by offering services that support the CE. This shift to service-based models can be identified as “servitisation” and refers to the value generation by transitioning from a product-oriented model to one that combines products and services [18–20]. Servitisation can be intended as synonymous with the concept of *product–service system* (PSS), which entails the integration of tangible products and complementary service offerings [11,12,21,22]. Servitisation allows to revisit business models by moving beyond traditional sustainable retail strategies, like optimising packaging, logistics, furniture and energy use in physical or digital stores [23]. In other words, pursuing environmental sustainability ought to be flanked by supporting education and change in consumers' behaviour [2]. Over the past decade, scholars have increasingly advocated for this shift, emphasising the importance of focusing on the customer-facing end of the supply chain, namely retail businesses [24]. Advances in technology allow us to inform design, enhance product use, and support maintenance, thereby enabling ever higher levels of service quality and greater customisation to meet consumers' individual needs. The retail industry appears to be ready for this sustainable shift, having emerged as the strategic and pivotal link in modern supply chains. Retailers now drive value creation by integrating upstream and downstream activities, managing the supply chain holistically and coordinating the flow of goods, information, and demand [25]. Furthermore, communication and marketing activities conducted through retail channels constitute critical mechanisms for disseminating information between producers and consumers, thereby facilitating the achievement of sustainability objectives [26]. And the pursuit of sustainability, according to the TBL, can mitigate the effects of natural disasters, wars, and pandemics, supporting companies in maintaining resilience and long-term viability [27].

Discussions about sustainable, slow, or ethical forms of fashion retail emerge from the literature, addressing it beyond environmental concerns. Bastos Rudolph et al. highlight the emergence of ethical fashion retail models grounded in marketing ethics and distributive justice. These retailers carefully curate their product offerings based on components, purpose, communication, and sourcing. They go beyond legal compliance by adopting environmental and social practices aimed at building relationships with stakeholders and advancing ethical standards [28]. Overdiek and Matheny explore the concept under the term “slow fashion retail”. Overdiek defines it as the sale of locally produced or reused garments and lifestyle products, with an emphasis on transparency regarding social issues (such as wages and working conditions) and environmental impact (such as carbon footprint and pollution). This approach encourages mindfulness around consumption and

disposal and is typically adopted by small, independent boutiques that value both style and sustainability, offering customised services and cultivating close relationships with suppliers and customers [29]. Matheny, in turn, describes slow fashion retail as a store experience that integrates physical, digital, and human touchpoints to connect sustainable brands with sustainability-conscious consumers, aiming to influence and educate them toward more environmentally and socially responsible behaviours. The author identifies six strategies, including the provision of “sustainable services” that extend product life in contrast to fast fashion, and create innovative consumer journeys [30]. Under the “slow retail” label, Alexander and Varley describe forms of retail that go beyond simple and quick transactions, and that are characterised by immersive and personalised experiences, as opposed to the efficiency and speed of “fast retail” [31].

From a service-oriented perspective, Dodds et al. describe sustainable fashion retail as a form of “transformative service” that delivers value not only to stakeholders through sustainable products but also to society at large by addressing contemporary challenges and helping co-create transformation from within the retail ecosystem. This includes providing sustainable products, ensuring ethical and transparent supply chains, fostering collaboration with suppliers and even competitors, and promoting sustainable behaviours and practices among all stakeholders [32]. Ronda’s study emphasises the need for deeper research into the drivers of fashion consumption, finding that high prices are not a primary obstacle, whereas limited awareness of environmental harms and scepticism about sustainability claims remain significant barriers [33]. Acknowledging the diversity within the retail sector, De Brito et al. classify fashion retailers into two groups: (A) those focused on economic survival, and (B) those aiming for economic growth while embracing broader responsibilities. While both groups view environmental action as driven by regulation, Group A sees social sustainability as “someone else’s responsibility”, whereas Group B internalises it as part of their business approach; this latter group is considered to have a better sustainability impact [34]. According to the proposed synthesis, sustainable fashion retail can be defined not only by its environmentally friendly attributes of its products and services, but also by the quality of relationships it builds with stakeholders and local communities, with the aim of generating a transformative impact on the supply chain (upstream) and on the served consumers’ communities and territories (downstream).

To propose a systemic overview of the role of services in sustainable fashion retail, previous research mapped service-based fashion retailing with the aim of understanding and organising the available initiatives in a theoretical framework [35]. Mapped activities are diverse and include initiatives for circularity, cultural impact, and social sustainability, such as innovative distribution models, on-demand production, personalisation, transparency-driven solutions, care and repair guides, consumer engagement, events, workshops, and initiatives with transformative social impact. Services are organised into three main areas. The area of *environmental sustainability* includes solutions or processes for a more responsible use of natural resources. These initiatives may represent examples of circular economy practices or, alternatively, linear models that promote the efficient use of energy and materials; i.e., “closing loops” and “slowing loops” solutions [36]. The second area, *culture of sustainability*, encompasses services designed to foster sustainable practices and promote awareness or behavioural change from within retail, intended as a “third place” that offers individuals a chance to gather, interact and build community [37–39]. These include initiatives oriented to education and culture [40] based on transparency, consultancy, events, and the valorisation of product heritage. Services are directed toward consumers, enabling retailers to cultivate more informed and engaged relationships through experiences of production processes, materials, and circular practices. Research on consumer behaviour demonstrates that educating consumers about the environmental advantages of circular

products and enhancing their environmental consciousness can affect their propensity to participate in sustainable consumption systems and their subsequent adoption of circular products and services [26]; the process appears to be hindered by the lack of accessible and accurate information [38]. Therefore, a limited number of collected initiatives target retail businesses, enhancing their competencies and educational capabilities related to sustainability. The third area addresses the *social dimension of sustainability*, examining how retailers can engage in ethical initiatives that promote distributive justice within their supply chains and their territorial areas. Beyond pursuing positive environmental outcomes, fashion can contribute to local communities through actions aimed at a positive social impact. This category includes enterprises directly and indirectly involved in retail activities. Services of this area are often provided in collaboration with “fashion-based social enterprises” that foster labour inclusivity, socioeconomic equity, intercultural and intergenerational exchange, and community engagement [41].

The above conceptual model confronts servitisation and the TBL framework, identifying pragmatic examples of implementation and organising them in specific areas. However, to the best of the author’s knowledge, comprehensive guidelines for service-based retail models that consider environmental, cultural, and social aspects of sustainability and that are capable of supporting the transition to sustainable and service-based business models are still needed. Such guidelines are useful to set future directions of sustainability in retail, anticipate challenges and responsibilities, and prevent pitfalls. The goal of this research is to identify a set of guidelines to help companies, designers, and policymakers, with a specific focus on the European market, in the effective application of a service-based and sustainable business model in fashion retail. Such guidelines aim to encompass not only the concept of environmental sustainability but also those of sustainability culture and social sustainability. To do so, it identifies three research questions:

- RQ1: *What components characterise service-based business models that support sustainability in the fashion retail sector?*
- RQ2: *What insights emerge from experts in the fashion retail sector regarding the challenges, opportunities, and responsibilities associated with adopting service-based sustainable models?*
- RQ3: *How can the findings from literature and expert consultation be integrated into a set of guidelines for sustainable, service-oriented fashion retail?*

To answer the above questions, a literature review (Section 2) was conducted to identify existing trends and components of service-based sustainable fashion retail. Then, a focus group with experts in the fashion retail sector is organised (Section 3) to gather insights on the topic. Outcomes of the focus group activity are analysed using thematic analysis (Section 4) and combined into guidelines that triangulate experts’ opinions with the components extracted from literature (Section 5). Conclusions are presented at the end (Section 6).

2. Literature Review

A systematic literature review was conducted using Scopus, one of the most comprehensive databases of peer-reviewed scientific publications, with the objective of identifying studies addressing conceptual frameworks of servitisation within the context of sustainable fashion retail. The research query was formulated to capture articles encompassing the thematic areas of sustainability, fashion industry, retail sector, servitisation, and conceptual frameworks, and was further refined to include the plethora of related terms and synonyms employed in the literature.

The retrieved papers were screened based on title, keywords, and abstract, and classified as *not relevant*, *peripheral*, *partially relevant*, or *directly relevant*. The specific focus on service-based models also excluded a substantial number of publications centred on interior

design and sustainable furniture. Articles labelled as *partially relevant* and *directly relevant* were taken into consideration to identify the research trends in sustainable service-based fashion retail. The subset of *directly relevant* papers was then read to compare the proposed frameworks and extract components of service-based retail for sustainable fashion. The process involved writing a summary of the pertinent aspects of each paper and revising the produced texts to identify recurring components. Unretrievable works are discarded, and a maximum of two works per author are retained. The process is summarised in Figure 1.

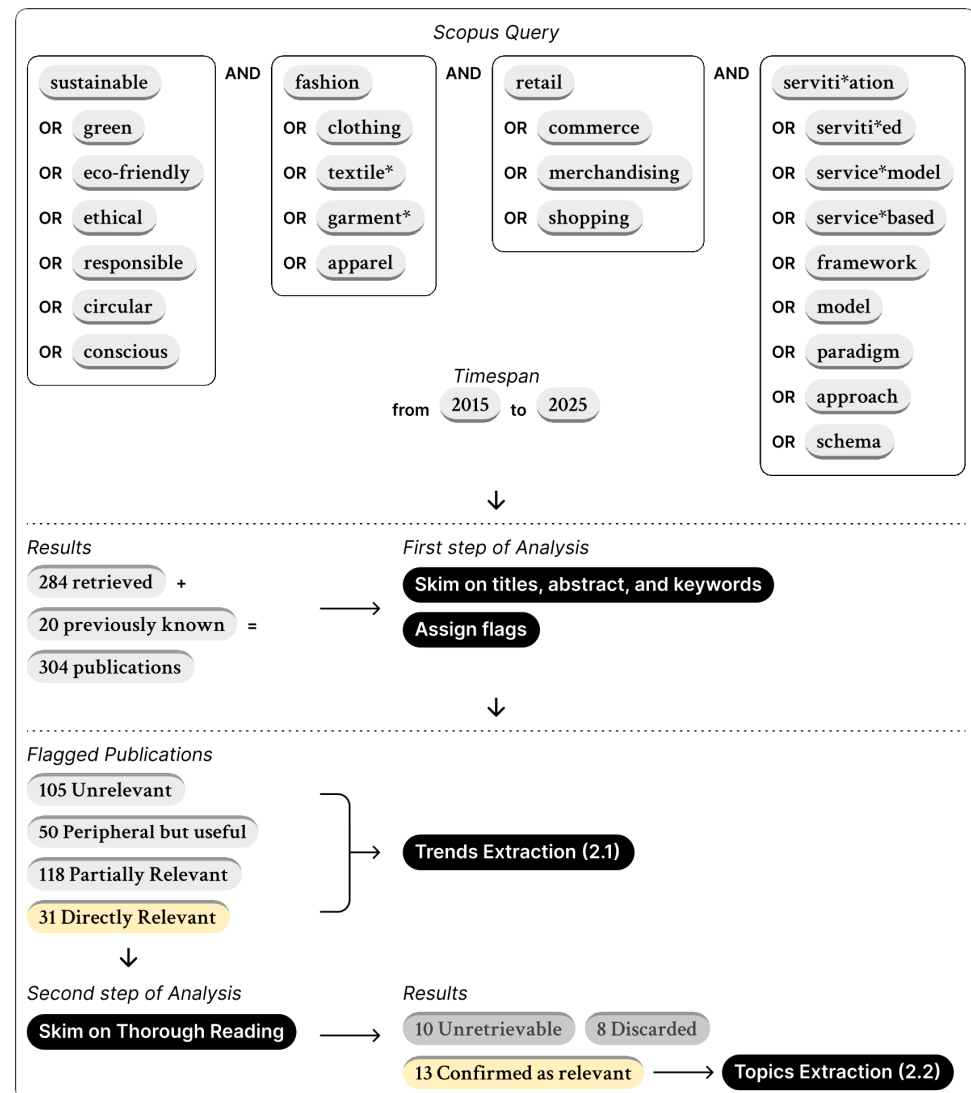


Figure 1. The diagram represents the process followed in the literature review. Asterisks (*) are part of the Scopus query; they act as a wildcard to replace one or more characters, letting you search for multiple word variations in a single term. Source: Author.

2.1. Trends in Service-Based Sustainable Fashion Retail

Fashion retailers are among the actors of the circular economy, and their increasing participation has intensified competition across the market [42].

Circular business models such as resale, rental, swapping, and recycling have been validated through LCA studies, confirming their overall lower environmental impact compared to conventional models [43], despite the emergence of fast second-hand consumption driven by the low prices of second-hand garments and incentive schemes such as discount vouchers [44]. Digital skills emerge as critical enablers of circular systems, particularly in view of the upcoming Digital Product Passport (DPP) regulation [45–47]. Meanwhile, soft

skills are identified as equally critical for fostering collaboration, which is considered a fundamental enabler of circular systems [45].

A substantial body of research focuses on consumer behaviour analysis to identify motivations, barriers, and other determinants influencing purchasing decisions. These studies employ both quantitative and qualitative methods, providing clear indications for marketing and communication strategies aimed at consumer engagement. Frequently studied target groups include Generation Z, Millennials (Gen Y), and female consumers. Among the most inquired aspects are the following: social media influencers [48–50]; willingness to pay a premium price, even up to 25%, for sustainable products [33,51–53]; and the diffusion of decluttering strategies as a behavioural response to overconsumption [54]. The review reveals regional focuses on emerging economies like Vietnam [55,56], Ethiopia [57,58], Bangladesh [27,59,60], Sri Lanka [61,62], South Africa [63–65], Malaysia [66,67], and India [68–72]. Northern Europe is studied for circularity studies [29,44,47,73–76], Italy for luxury [76,77].

Further recurrent topics are product returns and reverse logistics. The environmental footprint of these activities can be up to 90% of a company's total logistics impact [78] and 14% of a brand's overall emissions [79]. Consequently, identifying strategies to reduce the returns and their impact has become a critical research focus [80–82]. Several studies explore technological solutions, particularly those based on artificial intelligence (i.e., machine learning and neural networks), to develop more accurate recommendation systems capable of improving purchase decisions and reducing return rates [83–86]. These systems raise ethical and legal concerns, highlighting the importance of algorithmic transparency and fairness [87]. Closely related is packaging, with growing interest in reusable or compostable materials. To offset revenue losses caused by the higher cost of sustainable packaging, algorithmic models have been proposed to predict return probabilities and suggest the most suitable packaging solutions for each specific case [88]. Within the broader context of reverse logistics, recent studies show that retailers increasingly take control of secondary markets to retain the value of returned items, streamline resale pathways, and enhance resale rates [80,82,89–91]. For instance, peer-to-peer or customer-to-customer [74] returns allow a returned garment to be purchased directly by another consumer, bypassing the retailer's warehouse. In these cases, the retailer eliminates the costs associated with standard return procedures [74,80]. Another approach, known as “trying whilst the courier waits,” involves couriers waiting while customers try on items, thereby reducing return chances [80].

Several technologies have emerged that leverage artificial intelligence (AI), augmented reality (AR), Digital Product Passports (DPPs), and blockchain to support service-based retail models. Generative AI can be used to create content, such as display images for fashion communication, offering a low-impact alternative to traditional production methods that require physical sets and materials [92]. Augmented reality (AR) can be used to represent data contained within DPPs [93]. In parallel, modular digital solutions enable the integration of circular economy services facilitated by DPPs, including certifications of various types, allowing for interoperable systems [94]. Technological and data-driven solutions of Digital Human Modelling (DHM) demonstrate optimising clothing design and production, ensuring better fit, improved consumer resonance, and stronger alignment with sustainability principles [95]. Blockchain technology has also proven useful in supporting sharing economy models, such as shared wardrobe systems, rentals, and the second-hand market [96–98]. Finally, some initiatives make data directly accessible to consumers through circularity map applications, which give access to the location of local shops involved with circular fashion. Examples include *I Finded* in Porto [99], *A-Gain* in Berlin (<https://a-gain.guide/en/map>, accessed on 16 September 2025), and the *Milan Map of Circularity* (<https://r4milanoecosystem.it/mappa/>, accessed on 16 September 2025), all

of which use digital platforms to visualise and connect circular economy services within urban contexts.

A minority of studies explicitly address the Triple Bottom Line (TBL) of sustainability [4], suggesting that sustainability is predominantly investigated through the lens of environmental protection, leaving a gap to strengthen the social and cultural dimensions through service-based retail. A sustainable supply chain that accounts for the TBL can significantly influence organisational growth and the overall impact of an organisation [100]. From an organisational perspective, the importance of human resource management emerges, clarifying that a service-based business model can effectively support sustainable practices only if healthy and supportive working environments are promoted [101,102]: services cannot properly exist without valuing employees. The importance of appropriate employee management is further confirmed by behavioural studies, which state that consumers' purchase intentions are mediated by a positive consumer–retailer relationship [103]. The careful management of employees can be clearly observed in fashion-based social enterprises [41,100], which activate circular services by employing people from rural areas or vulnerable groups [104,105]. A particularly relevant concept in relation to the social component of sustainability is that of the “third place,” namely spaces of community life that facilitate and promote interactions of various kinds, including creative ones [38,39].

2.2. Components of Service-Based Business Models in Fashion Retail

Eight recurring components are extracted from the conceptual frameworks identified in the subset of *directly relevant* papers (Table 1). The components (Table 2) are formulated to support the analysis of the focus group outcomes in Section 5.

The first component (C1) is *long-term supply chain sustainability and transparency* and includes the adoption of certifications, verifiable sustainability standards, eco-labels, and supplier audits that ensure compliance (including just working conditions), reliability, and transparency [40,63,106]. Strategic supply chain interventions, such as the one described, are important for their capability to mitigate the impact of disruptive events and to ensure compliance with the health and safety legislation [27]. However, a completely standardised and transparent supply chain appears hardly achievable: a good supply chain management is cooperative and takes into account the individualities of suppliers. Attempts at increasing transparency, such as being “the most transparent company,” bring trade-offs: transparency as a *means* (collaboration) serves to systematically improve sustainability conditions in supply chains, whereas transparency as an *end* (standardisation) becomes a symbolic goal pursued for reputation or legitimacy rather than actual impact [73].

C2 is the *adoption of digitisation and technological solutions* and includes the innovation of store management and supply chain management [27]. Technologies allow for the implementation of in-store manufacturing with 3D sampling, AI, and robotics that ensure a lower environmental impact [27,63]. Digital technology (including the internet, e-commerce, and social commerce) facilitates access to sustainable products, fosters brand–consumer interaction, and enhances transparency [107]. Although the processes of circular businesses are hardly standardised, data management systems can be viable strategies to measure their environmental value and understand consumers' behaviour [102,106].

C2 is linked to C3, *breadth-scaling* [108], which identifies strategies and challenges related to the growth of circular business models. Inventory management constitutes an important challenge that can lead to substantial waste and overproduction [63]. Handled items are generally unique and require individual labelling and pricing, posing a challenge to scalability especially in online sales, where producing text and visuals is needed [89,102]. Breadth-scaling strategies can involve the replication and geographical expansion of the

business model, the centralisation and standardisation of processes, and the development of strategic partnerships and collaborations [108].

Breadth-scaling strategies build organisational confidence and precede C4, *depth-scaling*, which is related to the systemic change at the cultural and institutional level, involving customers and policies [108]. Enhancing understanding of sustainable products is considered of fundamental importance in the fashion retail industry as it reflects the environmental consciousness among customers [27,107,109]; it leads to evolved consumers' trust, choices and behaviours, that can be impacted by values, beliefs and norms adopted, promoted and communicated by retailers [26,40]. Immersive storytelling and experiential environments appear to be good educational strategies, especially for young individuals [38].

C5, *enhancement of human resources*, acknowledges the importance of qualified and committed employees to ensure the success of service-based retail models [101,102,109]. Attraction and retention of qualified staff can be achieved by fostering appropriate labour conditions [107] and a good working environment, which can be done by staff members themselves when appropriately valued [102]. Other mechanisms include participation in decision-making, profit-sharing schemes, training and career development opportunities, and job security [101,110]. Experience beyond fashion is particularly valuable, as traditional fashion firms often lack service-oriented competencies that are key to value co-creation with customers and partners [101].

C5 and C4 can be fostered by C6, having *functional and experiential brick-and-mortar shops*. A functional shop supports service-based models by receiving and handling garments and materials from customers, which have been intended as suppliers in circular business models [102]. Furthermore, an experiential shop leverages "functions" (increase dwell time, try before buy, extra services, increase consumption experience) and "features" (interactive, passive, participation in educational experiences) to engage customers and build interpersonal attitudes [38].

C7 involves *communication strategies*. Defining strategies for communicating and promoting sustainability and circularity efforts emphasises the values, beliefs, and norms adopted by the retailers, which are fundamental drivers of T4; products and marketing strategies must be aligned with consumers' priorities [26]. To prevent communication irregularities and mitigate the risk of greenwashing, it is suggested that clearer and consistent definitions of sustainability be established [106].

Lastly, C8 is the *institutional support for sustainable business models*. Competing with the linear economy brings economic challenges, in particular due to the barely standardised processes involved in circular economy business models [102,108]. Therefore, it is important that retailers invest effort in nurturing a systemic change that includes financial and policy support to sustainable business models and enable the transition to the circular economy [27,109]. One study [107] notes that policy frameworks should consider contextual differences in different regions and provide targeted incentives (financial subsidies, tax reductions, etc.) to improve the feasibility and expansion of circular models across diverse regions.

The transition to a circular economy calls for systemic changes and involves numerous stakeholders (i.e., companies, policymakers, consumers, suppliers) [8,26]. Several studies examined drivers and obstacles towards sustainability, but only a few examined their relationships [27]. Furthermore, the literature on sustainability drivers in service-based fashion retail appears fragmented. Circular business models appear to be composed of fragmented pilots and experiments aimed at building business cases [102]. While economic and environmental dimensions of the TBL are discussed, the social sustainability is not extensively addressed or even neglected [102]. In line with the above considerations, a gap

emerges regarding holistic formulations of strategies and recommendations to address contemporary sustainability challenges in service-based fashion retail. This gap is particularly evident in the limited availability of actionable insights that can inform local businesses, institutions, and policymakers. Therefore, the research asks: which components should fashion retailers that implement service-based models for sustainability focus on?

Table 1. The table presents the fourteen publications flagged as directly relevant, publication year, methods, and the eight identified components.

Title	Year	Methods	Components
Consumer Engagement in Circular Consumption Systems: A Roadmap Structure for Apparel Retail Companies [26]	2024	Literature Review, semi-structured interviews, roadmap development based on the Grand Challenges framework [111]	4, 7, 8
Modeling the supply chain sustainability imperatives in the fashion retail industry: Implications for sustainable development [27]	2024	Literature review, expert feedback, Pareto analysis, and the Bayesian Best–Worst Method (BWM)	1, 2, 4, 8
Communicating sustainability to children through fashion retail third places [38]	2025	Literature review and focus group	4
Scaling circular business models: Strategic paths of second-hand fashion retail [108]	2025	Process-based study	3, 4, 8
Exploring Scalability from a Triple Bottom Line Perspective: Challenges and Strategic Resources for Fashion Resale [102]	2023	exploratory interviews	2, 3, 5, 6
Trade-offs in supply chain transparency: The case of Nudie Jeans Co [73]	2015	Single case in-depth analysis and managers interviews	1, 4
Green merchandising of textiles and apparel in a circular economy: Recent trends, framework, challenges and future prospects towards sustainability [40]	2025	Literature review	1, 4
Back to the future of fashion: Circularity and consumer ethics [107]	2025	Quantitative survey analysis	2, 4, 5
Advancing circular economy in the textile industry: A Comprehensive Study of Reverse Logistics and Operational Practices in Austria [89]	2025	Literature review and qualitative questionnaire-based expert interviews	2, 3
Adoption of Eco-Friendly Waste Reduction Practices in the Clothing Retail Sector in Cape Town [63]	2024	Purposive sampling and in-depth interviews	1, 2, 3, 5
Eco-Transcendence in Fashion Retail [106]	2024	Survey administered with convenient sampling and statistical analysis	1, 2, 4, 7, 8
The challenges to circular economy in the Indian apparel industry: A qualitative study [109]	2025	Literature review and DELPHI study	4, 5, 8
The role of human resource management (HRM) for the implementation of sustainable product-service systems (PSS)-An analysis of fashion retailers [101]	2018	Quantitative questionnaire and ANOVA analysis	5

Table 2. The table presents a summary of the components that emerged from the review of the directly relevant publications.

Components and Description
C1—Long-term supply chain sustainability and transparency This component highlights the importance of certifications, audits, and verifiable sustainability standards that ensure compliance, reliability, and ethical practices. It also discusses the balance between transparency and collaboration, noting that full disclosure may conflict with cooperative supplier relationships.
C2—Adoption of digitisation and technological solutions Digital technologies such as AI, robotics, 3D sampling, and data management systems are key enablers of sustainability and efficiency. They improve supply chain transparency, reduce environmental impact, and enhance brand–consumer interactions in both physical and digital environments.
C3—Breadth-scaling This component explores how circular business models can be scaled through replication, standardisation, and strategic partnerships. It addresses operational challenges such as inventory management and the individual handling of garments, which complicate scalability in online and offline contexts.
C4—Depth-scaling Depth-scaling focuses on systemic cultural and institutional change to foster consumer understanding, trust, and responsible behaviour. It underscores the importance of educational experiences, storytelling, and value-driven communication to promote sustainability-oriented mindsets.
C5—Enhancement of human resources The success of service-based retail models relies on skilled, motivated employees and supportive labour conditions. Professional growth, fair wages, participatory decision-making, and cross-disciplinary expertise are critical for value co-creation with consumers and partners.
C6—Functional and experiential brick-and-mortar shops Physical stores act as operational hubs for circular practices and as experiential spaces that enhance customer engagement. Their design and functions support product take-back, education, and interaction, bridging logistics with immersive brand experiences.
C7—Communication strategies Effective sustainability communication requires coherence between corporate values, product offerings, and consumer expectations. Transparent and consistent messages help prevent greenwashing and reinforce consumer trust in retailers’ environmental and ethical commitments.
C8—Institutional support to sustainable business models Institutional and policy frameworks play a crucial role in facilitating the transition toward circular economy models. Financial incentives, regulatory support, and context-sensitive policies are essential to improve the viability and scalability of sustainable retail practices.

3. Materials and Methods

3.1. Participants in the Focus Group

A focus group [112–114] was conducted to gather expert opinions on retail and its relationship with sustainability. The focus group inquires about experts’ opinions regarding the application of service-based retail models to support sustainable fashion practices. The method was chosen for its ability to explore attitudes and beliefs through moderated group discussion, exploiting group dynamics to foster the emergence and articulation of ideas and opinions [112].

The research employs a purposive sampling strategy to identify candidates representing five distinct profiles involved in retail management and innovation (see Table 3). These profiles encompass expertise in key aspects of retail servitisation, addressing the environmental, cultural, and social dimensions of sustainability. Specifically, the identified areas of expertise include the establishment and management of servitised stores, process management, the management of fashion-based social enterprises, sustainable fashion communication, and technological innovation within the retail sector.

Table 3. Experts who participated in the focus group.

Profiles	Participants
Profile A: Manager from the fashion industry The profile describes professionals with a managing and strategic role in the fashion industry to bring into the discussion the perspectives of someone concerned with a company's organisational and economic matters (i.e., managing directors, heads of buying, marketing directors, and CEOs). Two participants with contrasting backgrounds were selected: one from a sustainability-focused company, the other from the fast fashion sector.	Participant 1 Formerly an industrial designer, P1 works for an Italian fabric producer operating under strict environmental regulations. The company promotes its low-impact production as a value-added feature and recently entered the B2C market with an on-demand store model.
Profile B: Social Entrepreneur in the Fashion System This profile includes professionals working in fashion-based social enterprises [41], supporting vulnerable groups [104,105] through labour inclusion and initiatives aligned with distributive justice [28]. Their activities include garment collection, sorting, upcycling, and social tailoring.	Participant 2 P2 is a professional in the fashion and luxury sectors and currently works for a multinational brand in the fast-fashion category. P2 has two decades of experience in the fashion field, particularly in management, retail buying, and e-commerce.
Profile C: Sustainable Fashion Communication Expert This profile includes professionals who raise public awareness of sustainable fashion by reporting on trends, technologies, policies, and events, and advocating for improved industry practices. Fashion communication often resonates with linear consumption models, but it can be a key factor in supporting the transition towards sustainability [115,116].	Participant 3 With a background in environmental engineering, P3 is an expert in circular economy and social cooperation. P3 chairs a long-standing SE in northern Italy that creates employment for vulnerable individuals by managing the reuse and resale of second-hand garments.
Profile D: Retail Technologist This profile includes professionals who implement technological solutions in retail, focusing on phygital and omnichannel strategies to enhance customer experience and operational efficiency [117,118].	Participant 4 P4 is a journalist with experience at a major women's fashion magazine and later specialised in corporate sustainability communication. P4 is part of a collective that uses fine arts, including exhibitions and performances in retail spaces, to promote sustainable fashion.
Profile E: Sustainability Consultant The profile describes experts in techniques, regulations, methodologies and opportunities in activating sustainable transitions. They guide brands and manufacturers towards environmentally and socially responsible practices.	Participant 5 With a background in industrial engineering, P5 has a decade of experience in digitalisation projects. P5 specialises in omnichannel strategies that connect consumers and brands through both digital and physical touchpoints, working in a company that develops scalable retail solutions.
	Participant 6 P6 has two decades of experience in the fashion industry as a slow fashion designer and a visual merchandising instructor. As an independent figure, P6 disseminates slow fashion concepts through various news outlets and co-founded a network that offers consultancy to startups and micro-enterprises focused on circular and socially responsible innovation.

For each profile, three to five potential candidates were identified through desk research, word-of-mouth referrals, and professional social networks. The candidates were subsequently discussed and ranked by the research team involved in the activity before invitations were issued. The final panel consists of six experts who accepted the invitation to participate.

Several participants combined multiple professional roles (e.g., designer-consultants, journalist-activists), reflecting the inherently interdisciplinary nature of sustainability-oriented careers. The panel was not designed to be statistically representative of a broader

population; rather, it was intended to provide information-rich cases relevant to the research objectives. Four out of six participants were geographically proximate and attended the sessions in person, while two participated remotely. Although most experts are based in Northern Italy, all maintain significant professional relationships with international companies and stakeholders. While some participants had met prior to the activity (see Table 4), the composition of the group and the research context suggest minimal risk of social desirability bias or excessive homogeneity. The components of service-based and sustainable fashion retail described in Section 2.2 are used to triangulate and interpret the results of the focus group, mitigating the limitations arising from the small panel size.

Table 4. A discussion guide for the conduction of the focus group is designed around the four phases that are commonly present in a structured focus group.

Focus Group Phases	Focus Group Questions
Phase 1: Introduction Participants were informed that the session aimed to inquire the area of service-based fashion retail and its links to sustainability, with the goal of formulating insights to support businesses and designers in innovating the retail industry. The discussion was moderated to encourage diverse viewpoints without requiring consensus. Before starting, the moderator confirmed that while some participants had briefly met at public events (P1 with P3; P4 with P6), no close personal or hierarchical relationships were present, suggesting that focus group participants felt no interference in expressing their opinions.	No questions
Phase 2: Exploration This phase aims to explore perspectives around the theme of sustainable retail, asking participants broad questions to collect general opinions and experiences.	Q2.1 When you think of sustainable retail, what comes to mind? Q2.2 When you think of the servitisation of retail, what comes to mind? Q2.3 When you think of the pairing of servitisation and sustainability, what comes to mind?
Phase 3: Intensive Discussion This phase presents and discusses the mapping of service-based retail described in the introduction to foster experts' reflections on the sector, evaluate the appropriateness of the mapping, and collecting suggestions for its improvement and deployment. The moderator used slides first to introduce the fundamental aspects of the framework (i.e., how it is created and its three main areas of services). Then slides are used to unpack the components of every area, using a storytelling approach based on incremental reveals to present content piece by piece, thereby preventing the audience from being overwhelmed. When needed, examples of services are provided to help participants understand the types of initiatives that have been mapped. Questions are asked after the presentation.	Q3.1 What do you think of the proposed service categorisation and the identified sub-groups? Which aspects would you modify, and how? Q3.2 Based on your professional expertise in the fashion industry, how frequently are the three previously described areas described together? Q3.3 Which types of retail can benefit from implementing one or more of these services? Q3.4 How do you think this mapping can be shared with retailers to encourage the implementation of one or more services? Q3.5 What opportunities and risks might be associated with implementing the presented services?
Phase 4: Conclusion The last phase aims to gather conclusive remarks by offering participants the opportunity to recall essential concepts or highlight any topics not addressed in the discussion.	Q4.1 Among the topics discussed, which do you consider the most relevant? And which aspects might have been overlooked?

3.2. Discussion Guide

The discussion guide [119] is designed around the four phases commonly encountered in a structured focus group [113]. The outline of the discussion is presented in Table 4.

3.3. Conduction of the Activity and Analysis of Results

Participants contributed evenly, with each one responding or sharing thoughts to almost every question. Due to the unpredictability inherent in the type of activity [112], the moderator skipped some questions because the themes were already covered while responding to a different prompt, or simply due to time constraints. The skipped questions are: Q2.2, Q3.2, Q3.4; Q3.5 has been merged into Q4.1 during the last phase.

Results were analysed using thematic analysis [120] in multiple and recursive iterations (Figure 2). The focus group was conducted and recorded using videoconferencing software, which provided an automatic transcription of the discussion; participants were previously informed and agreed to the usage of the collected data. The transcription was polished and anonymised using word processing software to produce the data for analysis. The data was the object of multiple readings to facilitate familiarisation and to progressively identify meaningful excerpts in the form of quotations from the transcription (i.e., data extracts). These excerpts were stored in a spreadsheet, with each excerpt linked to the focus group stage in which it originated and to the corresponding expert using a pseudonym for anonymity. Codes were then formulated based on the collected excerpts, grouping them under conceptual categories; individual excerpts could be associated with multiple codes. Building on the coded data, preliminary themes were developed in a word processor, supported by the identification of bullet points that captured the essence of each theme. Following the initial generation, the themes were reviewed and recombined. Theme 4.9 comprises a collection of diverse topics that, while considered relevant, did not fit within an overarching category or theme. In the final stage, the complete report was written using word processing software, ensuring a smooth and synthetic narrative; this stage also included the translation of the results into English.

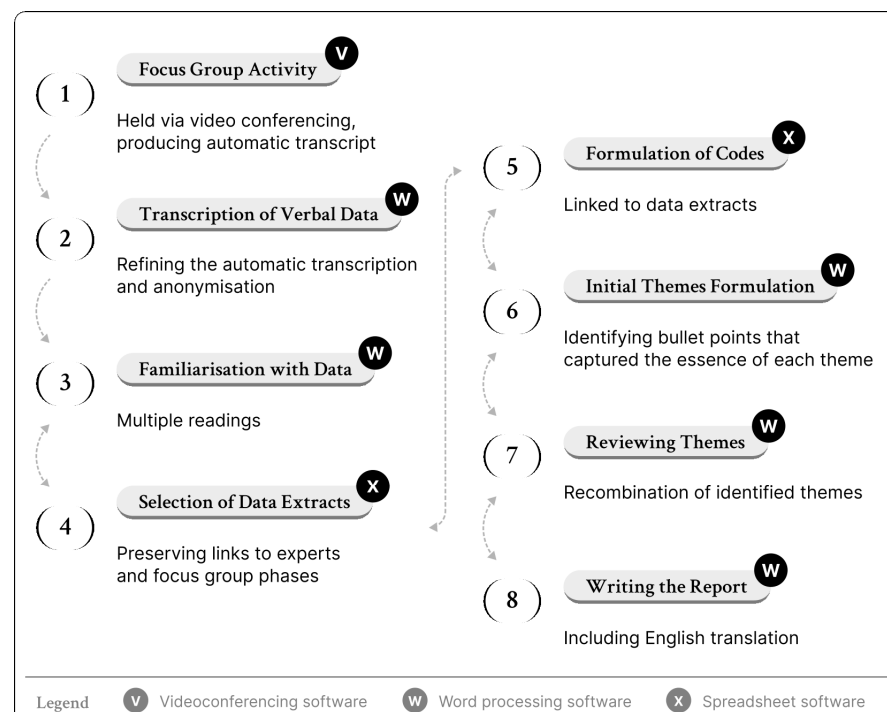


Figure 2. Overview of the recursive thematic analysis process [120]. The figure illustrates the eight sequential phases followed in the study, from the focus group activity to the final report writing. Each

phase specifies the main operations performed and the software tools employed (videoconferencing, word processing, and spreadsheet software). Arrows indicate the progression and recursion between steps. Source: Author.

4. Results: Emerging Themes from the Focus Group Analysis

The identified themes, summarised in Table 5, are discussed in detail in the following paragraphs.

Table 5. The table summarises the themes that emerged from the thematic analysis of the focus group discussion.

Theme
4.1 Retail as a Driver of Sustainability-Oriented Mindset
4.2 Retail as a Window over the Supply Chain
4.3 Servitised Retail in Support of a Sustainable Consumption
4.4 Sustainable retail as an Experiential Space
4.5 Transparency and Traceability as Founding Values of Sustainable Retail
4.6 The Role of EU Policies in Sustainable Fashion
4.7 Opportunities for Improving the Mapping of Service-based Fashion Retail
4.8 Stakeholders Interested in a Framework of Sustainable and Service-based Retail
4.9 Other opportunities: AI, cross-fertilisation, and brand accountability
4.10 Cross-fertilisation from the Agriculture Sector
4.11 Brand Accountability

4.1. Retail as a Driver of Sustainability-Oriented Mindset

Sustainable retail is generally recognisable from the sustainable products it sells [P3] and from the place it operates, which must demonstrate sustainable choices in construction materials, frequency of changing displays, energy efficiency, and personnel treatment [P2 and P4]. Even when considering more extended and transformative effects, these aspects should not be overlooked, as they serve to educate about sustainability at a more general level [P4]. P6 questions the purpose of the store: “What is the point of having a store today if it can’t offer more than the product? Retail must connect people.” Indeed, [P1] also considers it essential “to create a platform to put people in dialogue and reconnect them with products.” For P6, the term “consumer” should be reconsidered: “I find it a really horrible term from the 80s–90s”. P1 proposes the term “citizen” because their shop produces and serves locally and fosters people to participate in garment creation.

P3 adds that sustainable retail should communicate sustainability in an “invisible way” (i.e., pragmatic, without overemphasis) because the public has shown impatience towards communication about the adverse effects of the fashion industry, both in terms of environmental pollution and social exploitation. P1 raises the same communication issue: “people want to be pulled along, and we must manage to talk about sustainability without mentioning it because people are not here for a lesson.” At the same time, it is essential to value companies’ sustainable choices because they are not economically competitive when they are truly sustainable.

4.2. Retail as a Window over the Supply Chain

Retail should be considered a “window to what lies upstream” [P1]. P1, P4, and P5 explain that they consider retail as the visible part of a complex system regulated by certain business models. Retailers should provide a transparent narration of the supply chain as a means of differentiation. P4 describes that there is “growing interest in social media for fashion manufacturing videos” and that transparency is “an interesting hook for younger people.” However, this is also linked to a trust issue “because misconduct investigations regularly emerge” [P4]. Regarding the supply chain, P1 reflects on the importance of

local productions, expressing the need for new automatic and technological production systems". Such systems should enhance competitiveness among companies and increase their attractiveness to workers.

4.3. Servitised Retail in Support of a Sustainable Consumption

Retail can feature services related to the product, especially from a circular economy perspective. P6 argues that "to be consistent with sustainability principles, the big problem is overproduction. Reducing product sales and increasing the service part is of great importance in many ways." While using the store to create relationships, it is possible to think of offering "accessory services like consulting, repairing, upcycling" [P6]. Overproduction is also discussed by P1: "There is no need for another product, but we are convinced that production will not cease. New products must be studied and made with criteria of longevity and low end-of-life impact of materials." This logic fosters retail businesses to become "a reference point if you want to repair your garment" or "do upcycling" [P1]. P2 underlines the link between product and service, stating clearly that "Everything must start from the product" and that repairing low-value products is often inconvenient; therefore, higher product quality and consumer education are essential prerequisites for meaningful service models. P4 reflects on take-back services, considering them "the biggest cultural change that will have to come." The requirement to differentiate textile waste will likely "change our relationship with these objects, as it did with electronics". People, especially younger consumers, are concerned about the destination of their garments; the same concern applies to repair services: "knowing where my garment goes to be repaired, hopefully not in a sweatshop" [P4].

4.4. Sustainable Retail as an Experiential Space

Sustainable retail must offer an experiential space that fosters consumer passion and attachment to the product. One approach is to showcase production techniques and materials to highlight the true value of the physical product, both materially and intellectually. P1 describes sustainable retail as "a platform that reconnects people and products. Where there is no knowledge or involvement, the price is the only considered aspect." Exposure to the creation process can foster "another kind of respect for what is done." Customisation is another lever that enhances attachment and extends product use, countering fast-changing trends [P1 and P5]. According to P5, sustainability motivates only a few consumers; for others, persuasive levers such as uniqueness are key: "It has a higher cost, but it is something unique" [P5]. Customisation also supports sustainability by reducing inventory and production volumes. However, P3 warns of the exclusivity risk tied to high prices, "that can exclude many people." Attention to sustainability must also include attention to people, as it influences the business model and how a company positions itself to meet real needs.

4.5. Transparency and Traceability as Founding Values of Sustainable Retail

Transparency and traceability are considered fundamental for sustainable retail, as prerequisites for any sustainability initiative and as tools to counter greenwashing: providing services alone does not guarantee sustainability. According to P4, consumer education must accompany brands' traceability efforts: "I am absolutely in favour of education, but if I am invited to consume responsibly in a store made by someone that I know does not do anything else, I say: 'Look who's talking!'" P1 adds, "transparency and traceability are the key factors that make greenwashing more difficult." The context is evolving: "thanks to the legislation at the European level, greenwashing becomes increasingly difficult." A key development is the Ecodesign for Sustainable Product Regulation (ESPR) [5], announced in 2024, which introduces new product requirements in the EU. From 2027, textiles and

other categories will require a Digital Product Passport (DPP), a digital certificate detailing material, manufacturing processes, certifications, lifecycle history, and more. The DPP is expected to support circular business models and improve visibility across supply chains, resale platforms, maintenance guides, and recycling networks, eventually helping retain product value and prevent counterfeiting. Brands must leverage these regulations to remain competitive “in a scenario where they don’t have competitive prices” [P1]. P5, however, shifts the reflection to the global level, highlighting the tension between sustainability goals and global economic competitiveness. Transparency and traceability, they argue, have limited ability to boost competitiveness: “It is a long-term process and imposing it on large global brands is very difficult.” Regulations are currently effective only within a limited scope: “The European Union isn’t a drop in the ocean, but there are billions of people outside of it.”

4.6. The Role of EU Policies in Sustainable Fashion

Participants criticise the fashion industry’s self-regulating capability, stressing that detailed laws and consumer education are needed [P1 and P4]. Large companies, facing taxes and regulations, may step away from overproduction, while small companies remain less affected [P1]. Extended producer responsibility will gain importance [P3], and even minor changes in big corporations can have a noticeable global impact [P2]. P6 manifests scepticism about the role of politics in addressing sustainability. The complexity of global environmental issues means EU policies may take decades to show results [P3 and P4].

4.7. Opportunities for Improving the Mapping of Service-Based Fashion Retail

Participants listened to a presentation of the framework and discussed opportunities for improvement. Three themes emerged and are summarised here.

Participants express no need to enrich the framework through new cases but rather by identifying and representing connections between initiatives to delineate and describe broader processes. P3 proposes examples: “Services expand on a more transversal map: reuse descends from sorting, recycle is done in contexts that foster social sustainability.” P4 confirms the need to create transversal models in addition to individual services: “It might be useful to better understand the ecosystem.”

Another opportunity derives from differentiating between those service templates that comply with EU-imposed regulations and those that will be an added value. P2 shifts the attention to European regulations, suggesting: “highlighting which of these elements are mandatory according to the new European directives and which could be an added value provided by companies.” P4 reiterates this theme: “The value of the service will satisfy the minimum standard obligation or will do something more. That can be interesting.”

The last opportunity is the identification of a solution for validating the operation of a service through a commitment to transparency and traceability. P4 touches on a recurring theme related to service quality and transparency: “A service in itself for me is not sustainable, because there is a better and a worse way of doing things”. P2 agrees, thinking of transparency and traceability as macroscopic elements: “They must contain all the other services, providing visibility on where the garments go and what happens to them to understand if it can be sustainable or not”.

4.8. Stakeholders Interested in a Framework of Sustainable and Service-Based Retail

As P1 notes, “There is a theme, in my opinion, not only of compliance but also of relevance.” Without core values, relevance is difficult to achieve: “it all comes down to how much capital you invest in communication.” Virtuous brands seek to showcase their supply chains: “They desperately seek added value to say: ‘I am different.’” Alongside big brands tied to the established linear economy, many small companies are “setting things

up differently. It is clear that there is a market saturation that fosters their choices" [P1]. P1, then, suggests starting with mono-brand flagship stores, which "have more control over store, product, warehouse, and logistics." These stores can lead responsibility efforts and use the framework to identify what can already be implemented and to set goals for becoming "not only compliant, but relevant".

P2 highlights the role of education, suggesting collaboration with schools for long-term impact: "without them we cannot change things." P3 identifies politics as another key stakeholder: "This mapping is difficult to operationalise because of market mechanisms. A fundamental actor is politics, which defines the minimum rules for sustainability goals."

P4 proposes using the mapping to develop local labs outside a brand-centric model: "make geographically limited experiments with the support of local institutions and create a repair HUB for small and medium brands. That becomes the Milan Repair Lab (invented name)." P2 and P6 support this: "With 5 or 6 services, you can do a lot," and "I am also oriented towards collaboration spaces among brands." P6 adds that collaboration can emerge even without public support, if interests align: "the problem is solved by working together. . . activating spaces in collaboration among brands, companies coming together where services need to be implemented." For P4, proximity and collaboration are essential: "If you see something next to you, you become more involved. [. . .] You only get out together from this unsustainable situation."

According to P5, on a more general level, the beneficiaries include all stakeholders involved with shelf products across the supply chain and not just retailers, but "the extension from pure retail, intended as the last mile store, to everything that involves the supply chain. Because optimisation starts much earlier and touches several aspects."

4.9. Other Opportunities: AI, Cross-Fertilisation, and Brand Accountability

A key theme that emerged is predictive production driven by AI, which enhances how companies forecast demand, prevent overproduction, and minimise waste. This approach was highlighted by P5, emphasising the importance of producing only what is necessary: "Much attention is paid to predictive production with AI to mitigate the risk that a large part of the products will end up in the outlet where there is no margin." Additionally, adopting AI technologies can lead to a more sustainable production model by integrating various framework components to achieve more effective results. Despite the potential benefits, medium-sized enterprises often struggle to adopt AI due to high costs. P2 expressed concerns about the economic sustainability of these technologies for medium-sized companies: "Even very well-known brands are medium-sized enterprises, so they cannot currently afford AI engines because they are too expensive." Despite these difficulties, there are examples of small companies that have successfully experimented with AI: P5 mentioned a case of a small company in the publishing industry that does purely drop shipping and developed an AI solution internally, gaining a competitive advantage: "It was a gamble, but if they go down the right path, they will surely gain a competitive advantage."

4.10. Cross-Fertilisation from the Agriculture Sector

Experts reflect on cross-fertilisation possibilities from other fields to improve and advance the fashion sector. In particular, they discuss agriculture. P5 explains: "In agriculture, many young people are now introducing technologies [like] prediction, analysis, real-time soil measurement to optimise planting, harvesting, etc. The same must happen in all sectors." P4 confirms this: "Indeed, agriculture is a sector where a lot of public money is invested."

4.11. Brand Accountability

For P1, the sustainable transition in fashion must be addressed systematically through brand accountability. Companies are disconnected from production, and products become commodities: “companies produce but have never hired a worker, never bought a machine”. The expert describes a scenario where production is conducted at the lowest level, arriving at what he defines as “commodity trading.” Conversely, brands ought to take responsibility, deciding to invest in their production plants and imagining: “the adoption of modular and customisable production plants to serve nearby customers.”

5. Discussion

The outcomes of the focus group resonate with the majority of the retail components identified in the literature. The importance of supply chain transparency, digital and technological solutions, cultural and institutional change, employee development, immersive experiences, and effective communication strategies is confirmed. Among the subjects that do not find a complete alignment are the companies’ breadth-scaling, premium prices, and governmental support. The scaling-up of sustainable businesses is not explicitly mentioned by experts, with only one person mentioning the importance of reshoring production and adopting modular and innovative technologies; such elements can support the barely standardised nature of circular businesses and, therefore, nurture business growth. While literature suggests that customers are willing to pay higher prices for sustainable products, experts warn about the risk of exclusion. Especially in relation to customisation, experts highlight the importance of designing accessible or mid-range product-service combinations to keep prices accessible. In relation to governmental support, one expert is very sceptical about the possibility of receiving effective support from big institutions, while another two suggest that the current EU regulations will take decades to produce visible effects while acting on a very limited amount of the world population. Yet, multiple publications address fashion sustainability in emerging economies.

One aspect that emerged from experts and not from literature, possibly due to the servitisation focus of the research, is the design and quality of products (Theme 4.3). Experts suggest that sustainable retail business models should start from the way in which products are designed, because it makes little sense to repair, customise or refurbish an item of low value and quality.

5.1. Guidelines for Service-Based Fashion Retail

The confrontation of components identified in Section 2.2 with the results of the thematic analysis of the focus group reveals five credibility and engagement guidelines that fashion retailers can leverage to effectively apply service-based models in a sustainable perspective. Such recommendations are useful to anticipate the challenges and responsibilities associated with a service-based fashion retail model, and to prevent pitfalls that may compromise the image of brands and retailers. Each guideline presents a set of resources and goals: the former refer to the tools, assets, or enablers that retailers can leverage to implement sustainable service-based strategies; the latter indicate the strategic objectives and desired impacts that such resources are intended to produce.

5.1.1. Aim at Transparency

Discussing retail from a sustainability perspective involves reflections on retailers’ supply chain, including materials and production processes and services provision. It is necessary to deeply understand how products are made in order to present and distribute them appropriately so that retail becomes a window to what lies upstream. It is essential to recognise transparency and traceability as core values in the supply chain of both

products and services to work towards both environmental and social benefits. A complete, transparent, and traceable supply chain appears as a hardly achievable goal, and retailers can sacrifice transparency standardisation in favour of a collaboration with suppliers, taking into consideration individual differences, with the aim of employing transparency as a means to sustainability and not an end in itself [73]. As emerged both from the focus group (Theme 4.8) and the literature (Component 1), virtuous retailers leverage three types of resources: data management solutions, certifications, and DPP-oriented solutions. Such companies promote transparency with the aim of showcasing their supply chains and leveraging this aspect as a means of differentiation (Figure 3).

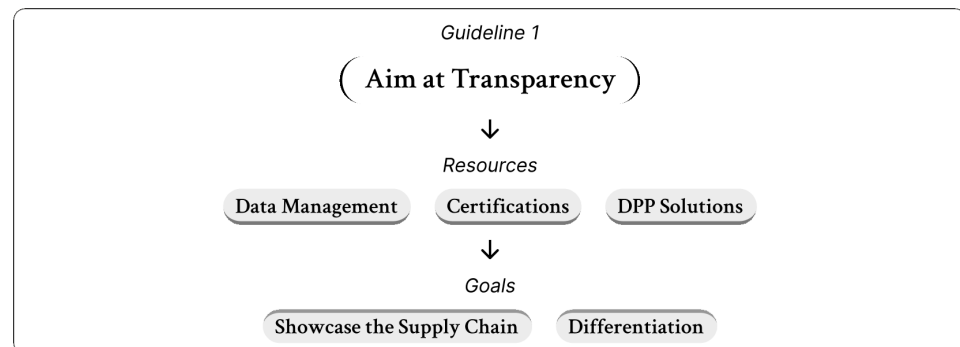


Figure 3. The diagram resources and goals of the first guideline, *Aim at Transparency*. Source: Author.

5.1.2. Adopt Digitisation and Technological Solutions

A challenge to sustainable business models is the competition with linear and standardised models that offer low prices often at the expense of overproduction and low product quality. The literature (Component 2) and the outcomes of the focus group (Themes 4.2 and 4.9) suggest that the adoption of digital and technological solutions works as a mitigation strategy. Data management platforms can support the standardisation of workflows, the understanding of consumers' behaviours, and the measurement of the environmental value of the conducted activities. Robotics and digital fabrication technologies can support the customisation of products, limit overproduction and optimise store inventories. AI solutions can help to predict consumption, provide better recommendations to limit returns, and support the production of visual and textual content. The described resources can be used by retailers to achieve different goals, including understanding consumer behaviour, measuring and reducing the impact of production and retail activities, and streamlining the barely standardised pipelines of circular economy retail services (Figure 4).

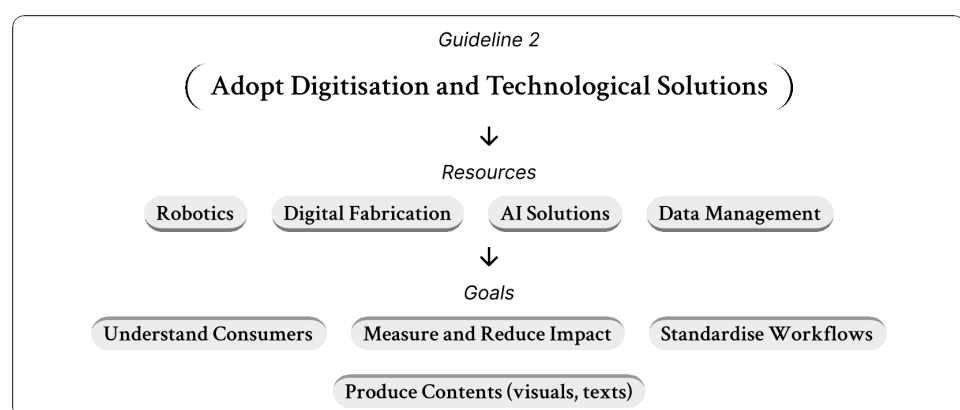


Figure 4. The diagram resources and goals of the second guideline, *Adopt digitisation and technological solutions*. Source: Author.

5.1.3. Offer Immersive Experiences and Community Building in the Store

Physical retail spaces are fundamental actors of sustainability through the offering of immersive experiences that can create connections among people and positively affect their behaviours. The topic is traceable in the literature (Components 4 and 6) and in the focus group (Themes 4.1, 4.4, 4.5). Physical retail spaces can provide increased dwell time, try-before-buy, and services to augment the consumption experience, resonating with the “slow retail” concept [30,31]. Retailers can employ resources that take on different guises. Services and workshops for aftercare (i.e., activities for customisation, care, repair, or upcycling) and the demonstration of products and processes count as immersive experiences that support customers in familiarising and valuing products, materials and techniques. Immersion can take place in digital and physical forms, leveraging in-store technologies or tactile experiences. Both literature and experts suggest leveraging the retail store in a logic of “third place” [39] and thinking about customers in terms of “partners” or “citizens.” This can involve bypassing the mono-brand logic to create hubs populated by multiple actors, companies and institutions. The goal for sustainable retail is to leverage the store as a place where to create meaningful relationships among consumers and products, as well as meaningful community connections to support engagement and the adoption of virtuous behaviours (Figure 5).

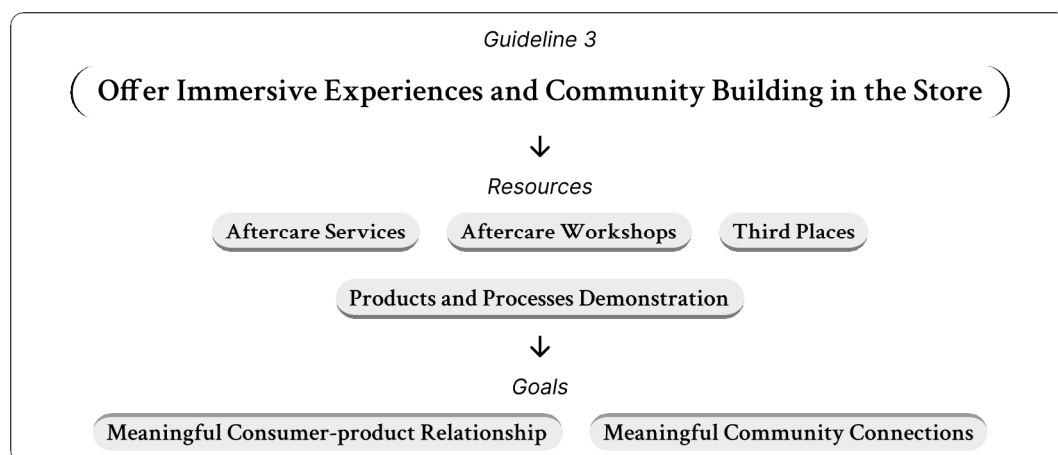


Figure 5. The diagram resources and goals of the third guideline, *Offer immersive experiences and community building in the Store*. Source: Author.

5.1.4. Enhance Human Resources

Immersive experiences and community building cannot be achieved without the collaboration of prepared and motivated employees, nor can the effective provision of a service-based retail model. This aspect is present in the literature (Component 5) and in experts’ opinions (Themes 4.2 and 4.3). In service-based retail, human resources are a precious asset that needs to be attracted and retained. Retailers’ resources to meet this guideline are diverse. First, come healthy and supportive working environments that satisfy the need for autonomy, competence, and relatedness [101]. Such environments can be developed with the collaboration of employees themselves and with the adoption of innovative in-store solutions for the management of products and inventory or for in-store manufacturing; such solutions contribute to rendering the store a more attractive workplace. Transparency in the treatment of employees and partners is another lever that contributes to the intrinsic motivation of people. Lastly, employees’ benefits include participation in decision-making, profit-sharing schemes, training and career development opportunities, and job security. The creation of an attractive workplace to attract and retain employees has the ultimate benefit of enhancing customer experience in service-based models (Figure 6).

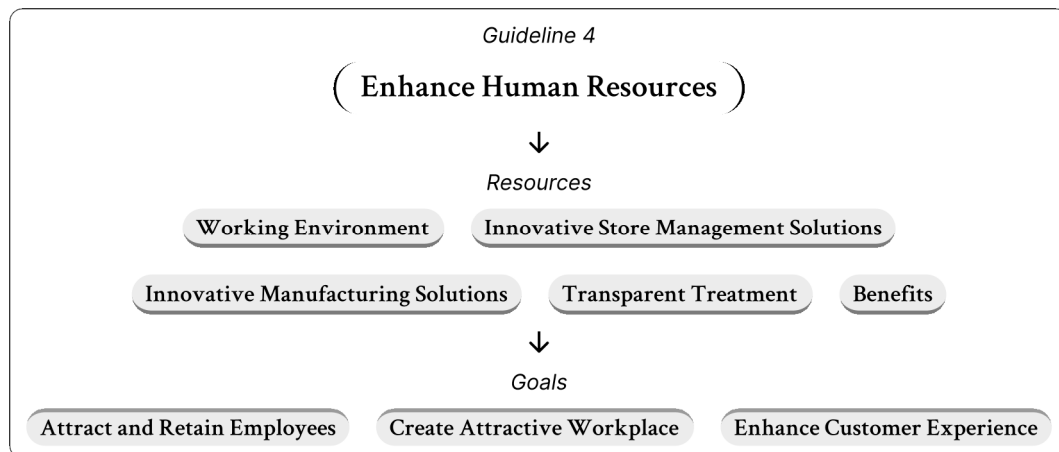


Figure 6. The diagram resources and goals of the fourth guideline, *Enhance Human Resources*. Source: Author.

5.1.5. Communicate Sustainability Efforts with a Pragmatic Tone of Voice

The communication of retailers' values and beliefs is of fundamental importance to contribute to the evolution of consumers' behaviour; however, the resistance to sustainability messages and the threat of greenwashing are critical factors that prevent consumers' engagement in sustainability. Such aspects can be retrieved in the literature (Components 1, 5, and 7) and in the focus group (Themes 4.1, 4.2, and 4.11). Retailers should identify components of their businesses that constitute added value and differentiation. To do so, it is necessary to monitor compliance with current regulatory standards and to discern which sustainability-related aspects, though not yet mandatory, anticipate future regulatory requirements. While adherence to existing regulations is required, the proactive anticipation of future standards represents a source of competitive value to customers. It is recommended that retailers adopt communication strategies that effectively convey sustainability initiatives in a pragmatic and balanced manner, avoiding an emphatic or self-congratulatory tone of voice. The goal is to increase consumer engagement in sustainability, mitigating their resistance and the risk of greenwashing (Figure 7).

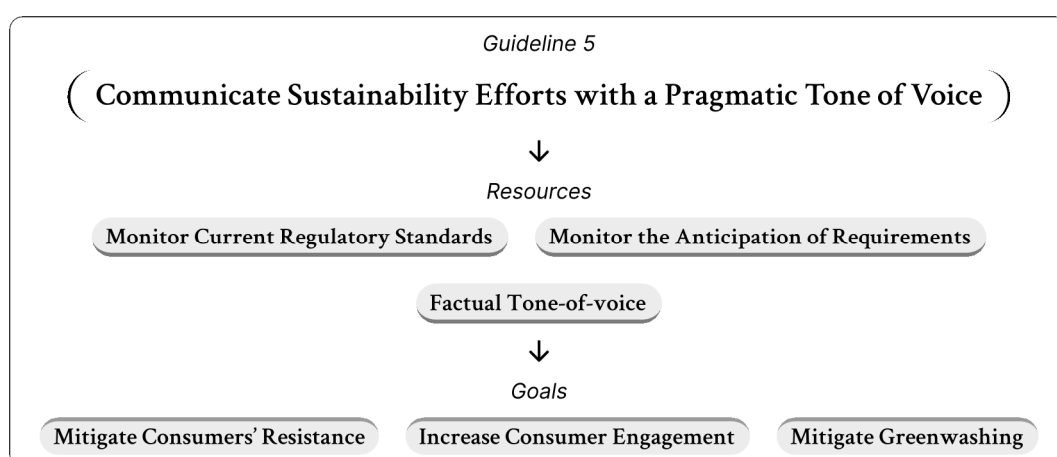


Figure 7. The diagram resources and goals of the last guideline, *Communicate Sustainability Efforts with a Pragmatic Tone-of-voice*. Source: Author.

5.2. Limitations and Further Works

Potential generalisability concerns of the presented study relate to the limited participant pool (N = 6) and geographic concentration of experts involved. The first limitation was

mitigated through triangulation with the scientific literature, which confronted findings of the focus group activity with components of service-based and sustainable retail extracted from previous research. The second aspect is mitigated by the extensive international networks that the experts and their companies maintain with stakeholders and policymakers. Nevertheless, the focus on the European market that characterises the study should be considered when interpreting and applying its findings because it may partially limit the global applicability of the results. The identified guidelines are accompanied by a discussion of implementation methods, structured around resources and goals. While the adaptation of these guidelines to firms' specific organisational capabilities lies beyond the scope of this paper, it represents a valuable direction for further research. Future studies could therefore explore how the proposed framework can be applied to different types of retail organisations (e.g., single-brand, multi-brand, or local stores), taking into account their operational characteristics and aiming at empirical validation through the identification of relevant key performance indicators (KPIs).

6. Conclusions

This study advances the discourse on the servitisation of fashion retail by integrating theoretical and empirical insights to formulate actionable guidelines for service-based and sustainable business models. The research addressed three main questions: the identification of components that characterise sustainable service-based fashion retail (RQ1), the understanding of experts' perspectives on related challenges and opportunities through a focus group activity (RQ2), and the identification of a set of guidelines to anticipate the challenges and responsibilities of retailers in implementing sustainable service-based models (RQ3). A systematic literature review was employed to formulate eight components underpinning sustainable retail practices, which served to triangulate the outcomes of the focus group. Such components are: (C1) long-term supply chain sustainability and transparency, (C2) adoption of digitisation and technological solutions, (C3) breadth-scaling, (C4) depth-scaling, (C5) enhancement of human resources, (C6) functional and experiential brick-and-mortar shops, (C7) communication strategies, and (C8) institutional support to sustainable business models. The confrontation of focus group findings with the components identified from literature led to the formulation of five guidelines articulated through resources and goals: (G1) aim at transparency, (G2) adopt digitisation and technological solutions, (G3) offer immersive experiences and community building in the store, (G4) enhance human resources, and (G5) communicate sustainability efforts with a pragmatic tone of voice. The research reinforces the role of retail as a cultural, environmental, and social driver of sustainability, and provides companies, designers, and policymakers with actionable directions to support the transition toward circular and service-based business models. Future research should therefore explore how the proposed guidelines can be adapted to different organisational contexts and retail formats, define measurable performance indicators to assess their implementation, and investigate how their application can accelerate the systemic transition toward a sustainable and service-oriented fashion retail ecosystem.

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Institutional Review Board Statement: Ethical review and approval were not requested for this study, due to any personal data collected have been processed in compliance with the GDPR and the

University's Code of Ethics, in particular according to the principles of consent, data minimization and pseudonymization; it is not possible to trace the identity of the participants to the research, and in any case, personal data are not subject to publication; the data have been processed and stored on the institutional University's platform, for the period strictly permitted under applicable laws and regulations, and with the implementation of all required security measures.

Informed Consent Statement: Written informed consent was obtained from all participants in research activities.

Data Availability Statement: Transcriptions of the research activity are available upon motivated request.

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Conflicts of Interest: The author declares no conflict of interest.

References

1. Kronthal-Sacco, R.; Whelan, T. *Sustainable Market Share Index*; NYU Stern Center for Sustainable Business: New York, NY, USA, 2022.
2. Dyllick, T.; Hockerts, K. Beyond the Business Case for Corporate Sustainability. *Bus Strat. Environ.* **2002**, *11*, 130–141. [\[CrossRef\]](#)
3. Purvis, B.; Mao, Y.; Robinson, D. Three Pillars of Sustainability: In Search of Conceptual Origins. *Sustain. Sci.* **2019**, *14*, 681–695. [\[CrossRef\]](#)
4. Elkington, J. *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*; Capstone: Oxford, UK, 1997; ISBN 978-1-900961-27-1.
5. Giddings, B.; Hopwood, B.; O'Brien, G. Environment, Economy and Society: Fitting Them Together into Sustainable Development. *Sustain. Dev.* **2002**, *10*, 187–196. [\[CrossRef\]](#)
6. De Aguiar Hugo, A.; De Nadae, J.; Da Silva Lima, R. Can Fashion Be Circular? A Literature Review on Circular Economy Barriers, Drivers, and Practices in the Fashion Industry's Productive Chain. *Sustainability* **2021**, *13*, 12246. [\[CrossRef\]](#)
7. Han, J.; Heshmati, A.; Rashidghalam, M. Circular Economy Business Models with a Focus on Servitization. *Sustainability* **2020**, *12*, 8799. [\[CrossRef\]](#)
8. Hultberg, E.; Pal, R. Lessons on Business Model Scalability for Circular Economy in the Fashion Retail Value Chain: Towards a Conceptual Model. *Sustain. Prod. Consum.* **2021**, *28*, 686–698. [\[CrossRef\]](#)
9. Potting, J.; Hekkert, M.; Worrell, E.; Hanemaaijer, A. *Circular Economy: Measuring Innovation in the Product Chain*; PBL Netherlands Environmental Assessment Agency: The Hague, The Netherlands, 2017.
10. Jensen, A.A.; Remmen, A. (Eds.) *Background Report for a UNEP Guide to LIFE CYCLE MANAGEMENT: A Bridge to Sustainable Products*; United Nations Environment Programme (UNEP): Nairobi, Kenya, 2006.
11. Vezzoli, C.; Conti, G.M.; Macri, L.; Motta, M. *Designing Sustainable Clothing Systems The Design for Environmentally Sustainable Textile Clothes and Its Product-Service Systems*; FrancoAngeli: Milan, Italy, 2022; ISBN 978-88-351-4011-5.
12. Tukker, A. Eight Types of Product–Service System: Eight Ways to Sustainability? Experiences from SusProNet. *Bus Strat. Environ.* **2004**, *13*, 246–260. [\[CrossRef\]](#)
13. Arrigo, E. Collaborative Consumption in the Fashion Industry: A Systematic Literature Review and Conceptual Framework. *J. Clean. Prod.* **2021**, *325*, 129261. [\[CrossRef\]](#)
14. Cardoso, G.F.; Spagnoli, A. Collaborative Fashion Consumption: Second-Hand PSSs as Agent of Change. In Proceedings of the Entanglements and Flows Service Encounters and Meanings, Rio de Janeiro, Brazil, 28 November 2023; pp. 458–477.
15. Iran, S.; Schrader, U. Collaborative Fashion Consumption and Its Environmental Effects. *J. Fash. Mark. Manag. (JFMM)* **2017**, *21*, 468–482. [\[CrossRef\]](#)
16. Henninger, C.E.; Alevizou, P.J.; Goworek, H.; Ryding, D. (Eds.) *Sustainability in Fashion: A Cradle to Upcycle Approach*; Springer International Publishing: Cham, Switzerland, 2017; ISBN 978-3-319-51252-5.
17. Tsui, T.; Peck, D.; Geldermans, B.; Van Timmeren, A. The Role of Urban Manufacturing for a Circular Economy in Cities. *Sustainability* **2020**, *13*, 23. [\[CrossRef\]](#)
18. Vandermerwe, S.; Rada, J. Servitization of Business: Adding Value by Adding Services. *Eur. Manag. J.* **1988**, *6*, 314–324. [\[CrossRef\]](#)
19. Kanatlı, M.A.; Karaer, Ö. Servitization as an Alternative Business Model and Its Implications on Product Durability, Profitability & Environmental Impact. *Eur. J. Oper. Res.* **2022**, *301*, 546–560. [\[CrossRef\]](#)
20. Tosun, P.; Tosun, G. The Impact of Servitization on Perceived Quality, Purchase Intentions and Recommendation Intentions in the Ready-to-Wear Sector. *J. Fash. Mark. Manag. (JFMM)* **2023**, *28*, 460–479. [\[CrossRef\]](#)

21. Beuren, F.H.; Gomes Ferreira, M.G.; Cauchick Miguel, P.A. Product-Service Systems: A Literature Review on Integrated Products and Services. *J. Clean. Prod.* **2013**, *47*, 222–231. [\[CrossRef\]](#)
22. Johnson, E.; Plepys, A. Product-Service Systems and Sustainability: Analysing the Environmental Impacts of Rental Clothing. *Sustainability* **2021**, *13*, 2118. [\[CrossRef\]](#)
23. Camera Nazionale della Moda Italiana. *Principi CNMI per la Sostenibilità del Retail*; Goldmann & Partners: Milan, Italy, 2017.
24. Ricchiardi, A.; Bugnotto, G. Customized Servitization as an Innovative Approach for Renting Service in the Fashion Industry. *CERN IdeaSquare J. Exp. Innov.* **2019**, *3*, 15–19. [\[CrossRef\]](#)
25. Defee, C.C.; Randall, W.S.; Gibson, B.J. Roles and Capabilities of the Retail Supply Chain Organization. *J. Transp. Manag. (JOTM)* **2009**, *21*, 31–47. [\[CrossRef\]](#)
26. Gomes, G.M.; Moreira, N.; Ometto, A.R. Consumer Engagement in Circular Consumption Systems: A Roadmap Structure for Apparel Retail Companies. *Circ. Econ. Sust.* **2024**, *4*, 1405–1425. [\[CrossRef\]](#)
27. Imran, M.d.T.I.; Karmaker, C.L.; Karim, R.; Misbaudhin, S.M.; Bari, A.B.M.M.; Raihan, A. Modeling the Supply Chain Sustainability Imperatives in the Fashion Retail Industry: Implications for Sustainable Development. *PLoS ONE* **2024**, *19*, e0312671. [\[CrossRef\]](#)
28. Bastos Rudolph, L.T.; Bassi Suter, M.; Barakat, S.R. The Emergence of a New Business Approach in the Fashion and Apparel Industry: The Ethical Retailer. *J. Macromarketing* **2023**, *43*, 367–383. [\[CrossRef\]](#)
29. Overdiek, A. Opportunities for Slow Fashion Retail in Temporary Stores. *J. Fash. Mark. Manag. (JFMM)* **2018**, *22*, 67–81. [\[CrossRef\]](#)
30. Matheny, R.L. Building a Case for Slow Retail Design. In Proceedings of the Designing Retail and Services Futures 2023: Reimagining the Future for Retail and Service Design Theory and Practices, London, UK, 30 March 2023; Design Research Society: London, UK, 2023.
31. Alexander, B.; Varley, R. Retail Futures: Customer Experience, Phygital Retailing, and the Experiential Retail Territories Perspective. *J. Retail. Consum. Serv.* **2025**, *82*, 104–108. [\[CrossRef\]](#)
32. Dodds, S.; Palakshappa, N.; Stangl, L.M. Sustainability in Retail Services: A Transformative Service Research (TSR) Perspective. *J. Serv. Theory Pract.* **2022**, *32*, 521–544. [\[CrossRef\]](#)
33. Ronda, L. Overcoming Barriers for Sustainable Fashion: Bridging Attitude-Behaviour Gap in Retail. *Int. J. Retail Distrib. Manag. (IJRDM)* **2024**, *52*, 44–61. [\[CrossRef\]](#)
34. De Brito, M.P.; Carbone, V.; Blanquart, C.M. Towards a Sustainable Fashion Retail Supply Chain in Europe: Organisation and Performance. *Int. J. Prod. Econ.* **2008**, *114*, 534–553. [\[CrossRef\]](#)
35. Elli, T.; Spagnoli, A.; Iannilli, V.M. Mapping Service-Based Retailing to Improve Sustainability Practices in the Fashion Industry. *Sustainability* **2024**, *16*, 7543. [\[CrossRef\]](#)
36. Bocken, N.M.P.; De Pauw, I.; Bakker, C.; Van Der Grinten, B. Product Design and Business Model Strategies for a Circular Economy. *J. Ind. Prod. Eng.* **2016**, *33*, 308–320. [\[CrossRef\]](#)
37. Alexander, B. Commercial, Social and Experiential Convergence: Fashion’s Third Places. *J. Serv. Mark. (JSM)* **2019**, *33*, 257–272. [\[CrossRef\]](#)
38. Elízaga, R.; Alexander, B.; Sádaba, T. Communicating Sustainability to Children through Fashion Retail Third Places. *Manag. Decis.* **2025**. [\[CrossRef\]](#)
39. Oldenburg, R. *The Great Good Place: Cafés, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts, and How They Get You through the Day*, 1st ed.; Paragon House: New York, NY, USA, 1989; ISBN 978-1-55778-110-9.
40. Rahaman, M.T.; Khan, M.S.H. Green Merchandising of Textiles and Apparel in a Circular Economy: Recent Trends, Framework, Challenges and Future Prospects towards Sustainability. *J. Open Innov. Technol. Mark. Complex.* **2025**, *11*, 100457. [\[CrossRef\]](#)
41. Hewitt, J.; Parker, L.; McQuilten, G.; Bigolin, R. Fashionable Altruism: The Marketing of Fashion-Based Social Enterprise. *Soc. Enterp. J.* **2025**, *21*, 442–465. [\[CrossRef\]](#)
42. Huang, H.; Wang, W.; Yin, Y. Optimal Strategies for a Multi-Channel Recycling Supply Chain in the Clothing Industry: Considering Consumer Types. *Int. J. Cloth. Sci. Technol. (IJCST)* **2023**, *35*, 833–847. [\[CrossRef\]](#)
43. Gray, S.; Sadhukhan, J.; Druckman, A.; James, K. A Comparison of Circular Business Models Using Life Cycle Assessment, Focusing on Clothing Retail, Distribution and Use. *Int. J. Life Cycle Assess* **2025**. [\[CrossRef\]](#)
44. Eggert, F.; Rahm, I.; Fuentes, C. Digital Platforms for Circular Shopping: Slowing down and Speeding up Second-Hand Clothing Consumption. *Int. Rev. Retail Distrib. Consum. Res.* **2025**, 1–20. [\[CrossRef\]](#)
45. Acerbi, F.; Hofmann Trevisan, A.; Vitti, M.; Caldarelli, P.; Dukovska-Popovska, I.; Downes, S.; Taisch, M.; Terzi, S.; Sassanelli, C. Market Needs for a Circular Transition: Implemented Practices and Required Skills. In *Advances in Production Management Systems. Production Management Systems for Volatile, Uncertain, Complex, and Ambiguous Environments*; Thürer, M., Riedel, R., Von Cieminski, G., Romero, D., Eds.; IFIP Advances in Information and Communication Technology; Springer Nature: Cham, Switzerland, 2024; Volume 728, pp. 262–274, ISBN 978-3-031-71621-8.
46. Pal, R.; Jayarathne, A. Digitalization in the Textiles and Clothing Sector. In *The Digital Supply Chain*; Elsevier: Amsterdam, The Netherlands, 2022; pp. 255–271, ISBN 978-0-323-91614-1.

47. Toşa, C.; Paneru, C.P.; Joudavi, A.; Tarigan, A.K.M. Digital Transformation, Incentives, and pro-Environmental Behaviour: Assessing the Uptake of Sustainability in Companies' Transition towards Circular Economy. *Sustain. Prod. Consum.* **2024**, *47*, 632–643. [\[CrossRef\]](#)
48. Agarwal, M. Virtual Influencers in Niche Markets: Unlocking Opportunities for Targeted Marketing. In *Practical Frameworks for New-Age Digitalization Business Strategy*; Tee, P.K., Song, B.L., Ho, R.C., Eds.; IGI Global: Hershey, PA, USA, 2025; pp. 273–306, ISBN 979-8-3373-2018-2.
49. Boyer, S.; Jiang, Z.; Lyu, J. Sustainable Style without Stigma: Can Norms and Social Reassurance Influence Secondhand Fashion Recommendation Behavior among Gen Z? *J. Glob. Fash. Mark.* **2024**, *15*, 341–356. [\[CrossRef\]](#)
50. Nguyen, D.M.; Nguyen, T. Eco or Ego? Promoting Second-Hand Luxury Consumption Using Message Appeals. *Int. J. Retail Distrib. Manag.* **2025**, *53*, 889–910. [\[CrossRef\]](#)
51. Cohen, C. Green & Sustainable Luxury: A Strategic Evidence. In *Thriving in a New World Economy*; Plangger, K., Ed.; Developments in Marketing Science: Proceedings of the Academy of Marketing Science; Springer International Publishing: Cham, Switzerland, 2016; p. 270, ISBN 978-3-319-24146-3.
52. Copeland, L. Exploring Young Consumers' Perceptions towards Sustainable Practices of Fashion Brands. *Fash. Style Pop. Cult.* **2024**, *11*, 527–553. [\[CrossRef\]](#)
53. Yao, L.; Yang, Z. Empirical Analysis on Intra-Industry Trade in Textile between China and Vietnam. *J. Phys. Conf. Ser.* **2019**, *1423*, 012008. [\[CrossRef\]](#)
54. Iran, S.; Martinez, C.J.; Walsleben, L.S. Unraveling the Closet: Exploring Reflective Decluttering and Its Implications for Long-Term Sufficient Clothing Consumption. *Clean. Responsible Consum.* **2024**, *15*, 100230. [\[CrossRef\]](#)
55. Hong Lan, L.; Watkins, J. Pre-Owned Fashion as Sustainable Consumerism? Opportunities and Challenges in the Vietnam Market. *J. Fash. Mark. Manag. (JFMM)* **2023**, *27*, 577–594. [\[CrossRef\]](#)
56. Nayak, R.; Akbari, M.; Maleki Far, S. Recent Sustainable Trends in Vietnam's Fashion Supply Chain. *J. Clean. Prod.* **2019**, *225*, 291–303. [\[CrossRef\]](#)
57. Kant, S.; Niguse, T.; Olubiyi, T.O.; Adula, M.; Kebede, K. Sustainable Fashion-Based Innovations and Consumer Behavior in Ethiopia. In *Advances in Business Strategy and Competitive Advantage*; Olubiyi, T.O., Behera, S.K., Tran, T.A., Eds.; IGI Global: Hershey, PA, USA, 2025; pp. 167–196, ISBN 979-8-3693-7853-3.
58. Khurana, K.; Tadesse, R. A Study on Relevance of Second Hand Clothing Retailing in Ethiopia. *Res. J. Text. Appar. (RJTA)* **2019**, *23*, 323–339. [\[CrossRef\]](#)
59. Yadlapalli, A.; Rahman, S.; Rogers, H. A Dyadic Perspective of Socially Responsible Mechanisms for Retailer-Manufacturer Relationship in an Apparel Industry. *Int. J. Phys. Distrib. Logist. Manag. (IJPDL)* **2019**, *49*, 242–266. [\[CrossRef\]](#)
60. Zebal, M.A.; Jackson, F.H. Cues for Shaping Purchase of Local Retail Apparel Clothing Brands in an Emerging Economy. *Int. J. Retail Distrib. Manag. (IJRDM)* **2019**, *47*, 1013–1028. [\[CrossRef\]](#)
61. Geegamage, T.; Ranaweera, A.; Halwatura, R. Pre-Loved or Hatred? Consumers' Perception of Value towards Second-Hand Fashion Consumption in Sri Lanka. *Res. J. Text. Appar. (RJTA)* **2024**, *28*, 1015–1030. [\[CrossRef\]](#)
62. Muthukumarana, T.T.; Karunathilake, H.P.; Punchihewa, H.K.G.; Manthilake, M.M.I.D.; Hewage, K.N. Life Cycle Environmental Impacts of the Apparel Industry in Sri Lanka: Analysis of the Energy Sources. *J. Clean. Prod.* **2018**, *172*, 1346–1357. [\[CrossRef\]](#)
63. Patnaik, S.; Patnaik, A. Adoption of Eco-Friendly Waste Reduction Practices in the Clothing Retail Sector in Cape Town. *Text Leather Rev.* **2024**, *7*, 1360–1376. [\[CrossRef\]](#)
64. Muposhi, A.; Chuchu, T. Influencing Millennials to Embrace Sustainable Fashion in an Emerging Market: A Modified Brand Avoidance Model Perspective. *J. Fash. Mark. Manag. (JFMM)* **2024**, *28*, 738–758. [\[CrossRef\]](#)
65. Patnaik, S.; Isaacs, S. Using Entrepreneurship to Address Economic Challenges. In *Europe in the New World Economy: Opportunities and Challenges*; Chivu, L., Ioan-Franc, V., Georgescu, G., De Los Ríos Carmenado, I., Andrei, J.V., Eds.; Springer Proceedings in Business and Economics; Springer Nature: Cham, Switzerland, 2024; pp. 405–414, ISBN 978-3-031-71328-6.
66. Raman, A.; Ramachandaran, S.D. Online Apparel Purchase and Responsible Consumption Among Malaysians. *TEM J.* **2023**, *12*, 2378–2384. [\[CrossRef\]](#)
67. Ramany, R.; Chan, T.-J.; Mohan, Y.M.; Lau, T.-C. Purchasing Behaviour of Sustainable Apparels Using Theory of Planned Behaviour: A Predictive Approach. *Malays. J. Consum. Fam. Econ.* **2022**, *29*, 179–215.
68. Beuria, R.K.; Kondasani, R.K.R.; Mahato, J. Unraveling the Impact of Minimalism on Green Purchase Intention: Insights from Theory of Planned Behavior. *Res. J. Text. Appar. (RJTA)* **2024**, *29*, 1038–1052. [\[CrossRef\]](#)
69. Gupta, M.; Pandey, M.; Kakkar, A. A Review of Consumer Perspectives on Green Apparel. In *Emerging Trends in Traditional and Technical Textiles*; Midha, V.K., Fanguiero, R., Rajendran, S., Eds.; Springer Proceedings in Materials; Springer Nature: Singapore, 2025; Volume 55, pp. 185–193, ISBN 978-981-97-5901-9.
70. Kiran, P. Barriers to Sustainable Transition in the Fashion Industry: Insights from India. *Sustain. Sci. Pract. Policy* **2025**, *21*, 2466286. [\[CrossRef\]](#)

71. Srividya, N.; Atiq, R.; Volety, N.S. Qualitative Research on Responsible Consumption Concerning Apparel. *Clean. Responsible Consum.* **2024**, *12*, 100178. [\[CrossRef\]](#)
72. Yadav, R.; Giri, A.; Alzeiby, E.A. Analyzing the Motivators and Barriers Associated with Buying Green Apparel: Digging Deep into Retail Consumers' Behavior. *J. Retail. Consum. Serv.* **2024**, *81*, 103983. [\[CrossRef\]](#)
73. Egels-Zandén, N.; Hulthén, K.; Wulff, G. Trade-Offs in Supply Chain Transparency: The Case of Nudie Jeans Co. *J. Clean. Prod.* **2015**, *107*, 95–104. [\[CrossRef\]](#)
74. Eruguz, A.S.; Karabağ, O.; Tetteroo, E.; Van Heijst, C.; Van Den Heuvel, W.; Dekker, R. Customer-to-Customer Returns Logistics: Can It Mitigate the Negative Impact of Online Returns? *Omega* **2024**, *128*, 103127. [\[CrossRef\]](#)
75. Sandberg, E. Orchestration Capabilities in Circular Supply Chains of Post-Consumer Used Clothes—A Case Study of a Swedish Fashion Retailer. *J. Clean. Prod.* **2023**, *387*, 135935. [\[CrossRef\]](#)
76. Schiaroli, V.; Alvino, L.; Verdonk, E.; Dangelico, R.M.; Fraccascia, L. Sustainability across Borders: Which Factors Influence Sustainable Footwear Choices? An Empirical Study on Italian and Dutch Consumers. *J. Clean. Prod.* **2025**, *521*, 146133. [\[CrossRef\]](#)
77. Zacheo, A.; Caratù, M.; Mainolfi, G. The Paths of Heritage Luxury Brands in the Digital Age: Italian Case Studies from the Fashion Industry. *Micro Macro Mark.* **2025**, 39–64. [\[CrossRef\]](#)
78. Long, J.; Liu, J. Hidden Footprints in Reverse Logistics: The Environmental Impact of Apparel Returns and Carbon Emission Assessment. *Sustain. Futures* **2025**, *10*, 101360. [\[CrossRef\]](#)
79. De Albuquerque Landi, F.F.; Fabiani, C.; Pioppi, B.; Pisello, A.L. Sustainable Management in the Slow Fashion Industry: Carbon Footprint of an Italian Brand. *Int. J. Life Cycle Assess* **2023**, *28*, 1229–1247. [\[CrossRef\]](#)
80. Frei, R.; Zhang, D.; Parry, G.; Wood, S.; Merlano, E.F. Scoping Innovative Retail Product Returns Pathways. *Strategy Leadersh.* **2025**, *53*, 658–686. [\[CrossRef\]](#)
81. Magano, J.; Turčinkova, J.; Santos, M.C.; Correia, R.; Serebriannikov, M. Exploring Apparel E-Commerce Unethical Return Experience: A Cross-Country Study. *J. Theor. Appl. Electron. Commer. Res.* **2024**, *19*, 2650–2672. [\[CrossRef\]](#)
82. Niederlaender, M.; Liebau, U.; Chen, Y.; Breustedt, E.; Driouech, S.; Werth, D. Strategic Returns Prevention in E-Commerce: Simulating Financial and Environmental Outcomes Through Agent-Based Modeling. In Proceedings of the 17th International Conference on Agents and Artificial Intelligence, Porto, Portugal, 23–25 February 2025; SCITEPRESS-Science and Technology Publications: Setúbal, Portugal, 2025; pp. 453–462.
83. Gry, S.; Niederlaender, M.; Lodi, A.N.; Mutz, M.; Werth, D. A Conceptual Approach for an AI-Based Recommendation System for Handling Returns in Fashion E-Commerce. In *Smart Business Technologies*; Van Sinderen, M., Hammoudi, S., Wijnhoven, F., Eds.; Communications in Computer and Information Science; Springer Nature: Cham, Switzerland, 2024; Volume 2132, pp. 1–23, ISBN 978-3-031-67903-2.
84. Sneha, K.; Badrinath, P. FITS: Fashion Innovation Through Synthesis. In Proceedings of the 2025 International Conference on Emerging Technologies in Computing and Communication (ETCC), Bangalore, India, 26 June 2025; IEEE: Piscataway, NJ, USA, 2025; pp. 1–6.
85. Niederlaender, M.; Driouech, S.; Gry, S.; Lodi, A.N.; Biswas, R.; Werth, D. Towards Waste Reduction in E-Commerce: A Comparative Analysis of Machine Learning Algorithms and Optimisation Techniques for Garment Returns Prediction with Feature Importance Evaluation. *SN Comput. Sci.* **2025**, *6*, 436. [\[CrossRef\]](#)
86. Sha, S.; Fan, Z.; Chi, C.; Wan, Y. An LSTM-Based System for Accurate Breast Shape Identification and Personalized Bra Recommendations for Young Women. *Int. J. Ind. Ergon.* **2025**, *107*, 103736. [\[CrossRef\]](#)
87. Singh, S.; Rajasekaran, A.; Sathawane, N.; Nandal, N.; Wagh, M.N.; Jadhav, M. Machine Learning Effects on Consumer Decision-Making and Purchase Behavior in the Fashion Industry of India. In Proceedings of the 2024 Ninth International Conference on Science Technology Engineering and Mathematics (ICONSTEM), Chennai, India, 4 April 2024; IEEE: Piscataway, NJ, USA, 2024; pp. 1–5.
88. Clement, L.; Spinler, S. From Returns to Re-Usage: A Data-Driven Strategy for Sustainable Packaging—A Case Study in e-Commerce. *J. Clean. Prod.* **2025**, *510*, 145584. [\[CrossRef\]](#)
89. Brandner, M.; Pfoser, S.; Voraberger, E.; Brandtner, P.; Schauer, O. Advancing Circular Economy in the Textile Industry: A Comprehensive Study of Reverse Logistics and Operational Practices in Austria. *Procedia Comput. Sci.* **2025**, *263*, 98–106. [\[CrossRef\]](#)
90. Cai, Y.-J.; Choi, T.-M.; Zhang, T. Commercial Used Apparel Collection Operations in Retail Supply Chains. *Eur. J. Oper. Res.* **2022**, *298*, 169–181. [\[CrossRef\]](#)
91. Fabro Cardoso, G. Community-Driven Consumption Dynamics: An Analysis of How Consumer Participation in Fashion Retailing Can Strengthen Sustainability. *Fash. Highlight* **2024**, *3*, 122–131. [\[CrossRef\]](#)
92. Zhang, H.; Mu, X.; Li, G.; Xu, Z.; Yu, X.; Ma, J. Mannequin2Real: A Two-Stage Generation Framework for Transforming Mannequin Images Into Photorealistic Model Images for Clothing Display. *IEEE Trans. Consum. Electron.* **2024**, *70*, 2773–2783. [\[CrossRef\]](#)

93. Jeganathan, K.; Szymkowiak, A. Bridging Digital Product Passports and In-Store Experiences: How Augmented Reality Enhances Decision Comfort and Reuse Intentions. *J. Retail. Consum. Serv.* **2025**, *84*, 104242. [CrossRef]
94. Franke, M.; Deng, Q.; Hribernik, K.A.; Thoben, K.-D.; Ciaccio, G. Towards a Service Marketplace to Empower Circular Economy Transition: An Example Application in the Supply Chain of Textile Industry. In *Advances in Production Management Systems. Production Management Systems for Volatile, Uncertain, Complex, and Ambiguous Environments*; Thüerer, M., Riedel, R., Von Cieminski, G., Romero, D., Eds.; IFIP Advances in Information and Communication Technology; Springer Nature: Cham, Switzerland, 2024; Volume 728, pp. 235–249, ISBN 978-3-031-71621-8.
95. Donmezer, S.; Demircioglu, P.; Bogrekci, I.; Bas, G.; Durakbasa, M.N. Revolutionizing the Garment Industry 5.0: Embracing Closed-Loop Design, E-Libraries, and Digital Twins. *Sustainability* **2023**, *15*, 15839. [CrossRef]
96. Jain, G.; Kamble, S.S.; Ndubisi, N.O.; Shrivastava, A.; Belhadi, A.; Venkatesh, M. Antecedents of Blockchain-Enabled E-Commerce Platforms (BEEP) Adoption by Customers—A Study of Second-Hand Small and Medium Apparel Retailers. *J. Bus. Res.* **2022**, *149*, 576–588. [CrossRef]
97. Shah, A.; Soomro, M.A.; Zahid Piprani, A.; Yu, Z.; Tanveer, M. Sustainable Supply Chain Practices and Blockchain Technology in Garment Industry: An Empirical Study on Sustainability Aspect. *J. Strategy Manag. (JSM)* **2023**. [CrossRef]
98. Thakur, S.; Breslin, J.G. Peer to Peer Energy Trade Among Microgrids Using Blockchain Based Distributed Coalition Formation Method. *Technol. Econ. Smart Grids Sustain. Energy* **2018**, *3*, 5. [CrossRef]
99. Barreto, S.; Fidelis, A.C. Digital Approach to Slow Fashion: Mapping Second-Hand Stores in Porto. *Fash. Highlight* **2025**, *S11*, 402–411. [CrossRef]
100. Mishra, O. Twirl Store: Pioneering Sustainable Textile Practices by Closing the Loop. *Emerald Emerg. Mark. Case Stud. (EEMCS)* **2024**, *14*, 1–29. [CrossRef]
101. Adam, M. The Role of Human Resource Management (HRM) for the Implementation of Sustainable Product-Service Systems (PSS)—An Analysis of Fashion Retailers. *Sustainability* **2018**, *10*, 2518. [CrossRef]
102. Hultberg, E.; Pal, R. Exploring Scalability from a Triple Bottom Line Perspective: Challenges and Strategic Resources for Fashion Resale. *Circ. Econ. Sust.* **2023**, *3*, 2201–2231. [CrossRef]
103. Chan, T.J.; Mohd Suki, N.; Ho, P.S.Y.; Akhtar, M.F. Impact of Corporate Social Responsibility Practices on Consumer Purchase Intention of Apparel Products with Mediating Role of Consumer-Retailer Love. *Soc. Responsib. J.* **2024**, *20*, 998–1014. [CrossRef]
104. Liamputtong, P. *Researching the Vulnerable: A Guide to Sensitive Research Methods*; SAGE: London, UK; Thousand Oaks, CA, USA, 2007; ISBN 978-1-4129-1253-2.
105. Mechanic, D.; Tanner, J. Vulnerable People, Groups, And Populations: Societal View. *Health Aff.* **2007**, *26*, 1220–1230. [CrossRef]
106. Parwal, A.; Sarkar, M.; Gautam, R.S.; Rastogi, S.; Sharma, S. Eco-Transcendence in Fashion Retail. In Proceedings of the 2024 Second International Conference on Advances in Information Technology (ICAIT), Chikkamagaluru, India, 24 July 2024; IEEE: Piscataway, NJ, USA, 2024; pp. 1–6.
107. Novo-Corti, I.; Membiela-Pollan, M.; Tirca, D.M. Back to the Future of Fashion: Circularity and Consumer Ethics. *E+M* **2025**, *28*, 212–228. [CrossRef]
108. Hultberg, E. Scaling Circular Business Models: Strategic Paths of Second-Hand Fashion Retail. *J. Fash. Mark. Manag. (JFMM)* **2025**, *29*, 181–197. [CrossRef]
109. Zaidi, A.A.; Chandra, R. The Challenges to Circular Economy in the Indian Apparel Industry: A Qualitative Study. *Res. J. Text. Appar.* **2025**, *29*, 465–486. [CrossRef]
110. Schmidt, D. The Role of Markup in the Digital Humanities. *Hist. Soc. Res.* **2016**, *37*, 125–146.
111. George, G.; Howard-Grenville, J.; Joshi, A.; Tihanyi, L. Understanding and Tackling Societal Grand Challenges through Management Research. *Acad. Manag. J.* **2016**, *59*, 1880–1895. [CrossRef]
112. Acocella, I. *Il Focus Group: Teoria e Tecnica*, 2nd ed.; Franco Angeli: Milan, Italy, 2015; ISBN 978-88-464-9257-9.
113. Cannavò, L.; Frudà, L. *Ricerca Sociale*, 1st ed.; Carocci: Rome, Italy, 2007; ISBN 978-88-430-3944-9.
114. Zammuner, V.L. *I Focus Group; Aggiornamenti Aspetti della Psicologia*; Il Mulino: Bologna, Italy, 2003; ISBN 978-88-15-08494-1.
115. UNEP. *The Sustainable Fashion Communication Playbook Shifting the Narrative: A Guide to Aligning Fashion Communication to the 1.5-Degree Climate Target and Wider Sustainability Goals*; UNEP (United Nations Environment Programme): Nairobi, Kenya, 2023; ISBN 978-92-807-4048-6.
116. Webb, B. Why the Way Fashion Talks about Sustainability Needs to Change. Vogue Business, 27 June 2023. Available online: <https://www.vogue.com/article/why-the-way-fashion-talks-about-sustainability-needs-to-change-united-nations-sustainable-fashion-communication> (accessed on 16 September 2025).
117. Pangarkar, A.; Arora, V.; Shukla, Y. Exploring Phygital Omnichannel Luxury Retailing for Immersive Customer Experience: The Role of Rapport and Social Engagement. *J. Retail. Consum. Serv.* **2022**, *68*, 103001. [CrossRef]
118. Verhoef, P.C.; Kannan, P.K.; Inman, J.J. From Multi-Channel Retailing to Omni-Channel Retailing. *J. Retail.* **2015**, *91*, 174–181. [CrossRef]

119. Greenbaum, T.L. *Moderating Focus Groups: A Practical Guide for Group Facilitation*; Sage Publications: Thousand Oaks, CA, USA, 2000; ISBN 978-0-7619-2043-4.
120. Braun, V.; Clarke, V. Using Thematic Analysis in Psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [[CrossRef](#)]

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