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Logistics and supply chain capabilities for value creation in textile and fashion circular supply chains – a systematic literature review

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Abstract

Purpose – While the importance of logistics and supply chain management in circular supply chains (CSCs) is recognised, current research lacks a granular understanding of the specific capabilities required to translate circular activities into multidimensional value. This study explores the detailed linkage between logistics and supply chain capabilities (LSCCs) and triple bottom line (TBL) value creation across four distinct textile and fashion CSC activities: collection, sorting, reuse and recycling.

Design/methodology/approach – A systematic literature review (SLR) was conducted on 70 peer-reviewed journal articles published between 2012 and 2025. A thematic analysis was used to inductively identify specific LSCCs within each CSC activity and deductively map their contributions to economic, environmental and social value.

Findings – The LSCCs are synthesised into a two-pillar framework consisting of operational and strategic LSCCs. Findings demonstrate that while LSCCs directly drive economic and environmental value through improved supply chain efficiency and effectiveness, social value is predominantly an indirect outcome fostered through strategic transparency, consumer empowerment and human–machine collaboration in Industry 5.0.

Originality/value – The novelty lies in its granular activity-based approach, revealing that required LSCCs and their value outcomes differ across activities. Unlike a unified view of circular systems, this article systematically links specific LSCCs to holistic TBL value creation, providing distinct pathways to holistic sustainability and clarifies how the inherent challenges between the four CSCs activities can be resolved.

Keywords Circular economy, Circular logistics, Valorisation, TBL, Apparel

Paper type Literature review

1. Introduction

In response to intensified sustainability challenges, many industries are striving to adopt more circular practices, with the textile and fashion industry being a critical case in this study. As one of the largest global industries with a decisive environmental impact, its circular transition is urgent, yet fraught with critical challenges, including saturated second-hand markets, limitations in recycling technologies and complicated international regulations and business development. To overcome these issues, the development of effective circular supply chains (CSCs), which are essential for managing material flows and realising the potential of circular economy (CE) practices (e.g. Lambert, 2014; Batista *et al.*, 2018; Dragomir and Dumitru, 2022), plays a significant role. The performance of these CSCs hinges on logistics, and supply chain management (SCM) is considered one of the main building blocks of CE and has recently been acknowledged for its role not only for cost minimisation and optimisation, but also for value creation (Lüdeke-Freund *et al.*, 2019; Bressanelli *et al.*, 2022; Butt *et al.*, 2024; Papert

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et al., 2024). The importance of logistics and SCM has been noted specifically in the circular textile and fashion industry. For instance, according to Kamble and Behera (2021), textile waste in landfill is due to a lack of awareness and poor SCM; the planning and performance of first-mile deliveries, i.e. the collection of post-consumer textiles, is emphasised (Jäämaa and Kaipia, 2022); sorting practices are often deemed to have a substantial impact on value extraction (Botticello, 2012; Paras *et al.*, 2019) and successful large-scale automated sorting and subsequent recycling practices are dependent on adequate supply of materials to ensure appropriate value creation (McKinsey, 2022; Hinkka *et al.*, 2023). Overall, there seems to be a general consensus that logistics and SCM are of great importance for efficient and effective CSCs facilitating CE transition, and decisive for successful value creation along the triple bottom line (TBL), i.e. economic, environmental and social value creation (Mishra *et al.*, 2018; Saeed and Kersten, 2020; Hazen *et al.*, 2021; Pal and Sandberg, 2024).

To understand how these textile circular systems function and create value, this study focuses on three core, interconnected concepts: CSC activities, logistics and supply chain capabilities (LSCCs) and multidimensional value creation. First, within the textile industry, the CSC is comprised of four distinct CSC activities: collection, sorting, reuse and remanufacturing (e.g. Sandberg *et al.*, 2018; dos Santos and de Souza Campos, 2021; Sandberg and Pal, 2024). Each activity presents unique operational challenges and opportunities. Second, to execute these activities, firms must develop specific LSCCs. Drawing on the resource-based view, we define LSCCs not as the resources a firm has, but what it does to coordinate those resources to effectively and/or efficiently improve logistics and supply chain performance (e.g. Cho *et al.*, 2008; Haag *et al.*, 2019). Third, the outcome of successfully deploying these capabilities is multidimensional value creation. In a circular context, value extends beyond profit to include environmental and social benefits, a concept best captured by the TBL framework (e.g. Elkington, 2004; Joyce and Paquin, 2016; Pal and Sandberg, 2024).

While a general consensus exists that logistics and SCM are vital for circularity, the specific capabilities required to operationalize value creation across the diverse activities of the textile and fashion CSC remain insufficiently detailed (Sandberg *et al.*, 2018). Therefore, based on a systematic literature review (SLR), the purpose of this study is to explore the relationship between LSCCs and multidimensional value creation across the distinct activities of the textile and fashion CSCs. We aim to clarify how specific LSCCs contribute to economic, environmental and social value within collection, sorting, reuse and recycling. To guide this exploration, our SLR is structured around two research questions.

RQ1. What are the LSCCs in CSC activities (collection, sorting, reuse, recycling)?

RQ2. To which value along the TBL (economic, environment, social) do these LSCCs contribute?

The remainder of this article starts with conceptual background clarifying the key concepts we used in this research. Thereafter, our SLR methodology approach is presented. Then, in findings, a descriptive quantitative overview of the reviewed literature and a thematic analysis of their contents are elaborated. Finally, in conclusion, research implications, managerial implications and limitations and future research are provided.

2. Conceptual background

This study is based on the three concepts: Textile and fashion CSC activities, LSCCs and value creation based on the TBL. Accordingly, the scope and concept of the study were designed in relation to the key concept domains as presented in Figure 1.

2.1 Circular supply chain activities in the textile industry

CSCs are based on industrial systems designed to be restorative and regenerative, where materials are circulated for as long as possible to create the highest possible value over time

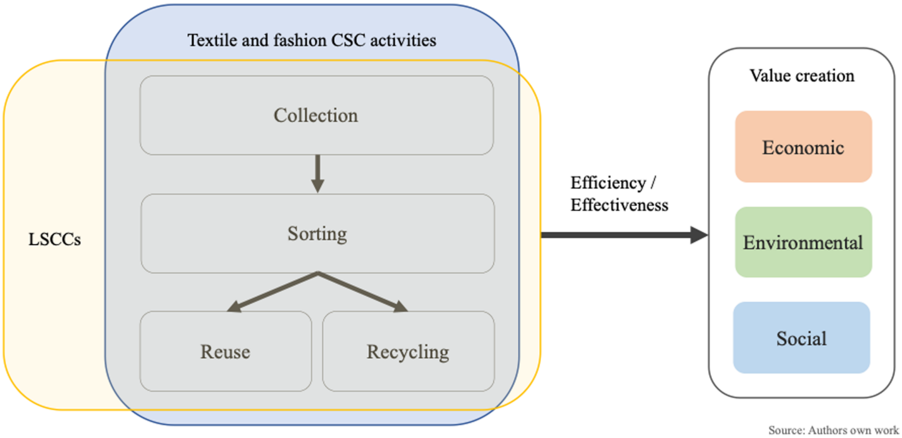


Figure 1. Scope and concept of the study

(e.g. Batista *et al.*, 2018; Koszewska, 2018). In such a system, there is steadily growing research attention to topics such as reverse logistics, green supply chains, sustainable SCM and closed-loop supply chains (Batista *et al.*, 2018; Sandberg and Pal, 2024). Despite overlapping terms and definitions, CSCs are often considered to contain a number of processes aimed at value extraction based on the recovery of materials, typically ranging from reuse, repair, reconditioning, refurbishing and remanufacturing, to recycling (World-Economic-Forum, 2014; Ellen-MacArthur-Foundation, 2017).

In the textile industry, and for the purpose of this study, these processes are framed within four major supply chain activities: collection, sorting, reuse and recycling (e.g. Sandberg *et al.*, 2018; dos Santos and de Souza Campos, 2021; Sandberg and Pal, 2024).

Collection is the natural starting point of the textile and fashion CSCs involving multiple actors, e.g. non-profit organisation, retailers and municipalities (e.g. Pal *et al.*, 2019; Zhuravleva and Aminoff, 2021; Hinkka *et al.*, 2023). The primary goal is to gather post-consumer textiles through various collection modes, typically ranging from collection bins, in-store collection, to pick-up at homes. From a value creation perspective, achieving a high share of reusable items during collection is decisive for the economic viability of the entire circular system (Botticello, 2012; Zhuravleva and Aminoff, 2021; Jäämaa and Kaipia, 2022). Other crucial factors for value creation are to enhance cost-efficient transportation (Hellström and Olsson, 2024) as well as donation-convenient collection practices (Dragomir and Dumitru, 2022; Butt *et al.*, 2024).

Sorting is a critical stage in the textile and fashion CSCs for optimal value extraction of the collected items (e.g. Botticello, 2012; Paras *et al.*, 2019; Hinkka *et al.*, 2023). It is broadly divided into two categories: sorting for reuse and sorting for recycling (Fashion-for-Good, 2022). Sorting for reuse aims to identify items for reuse purposes and is often based on labour-intensive manual sorting (e.g. Nørup *et al.*, 2018; Sandberg and Pal, 2024), in which non-profit charity organisations often play a significant role (Pal, 2017). Meanwhile, sorting for recycling is based on the items' colour and material composition (e.g. Sandvik and Stubbs, 2019; McKinsey, 2022). Although manual sorting for recycling is still dominating – often conducted by specialised sorting firms in low-wage countries – developments of technologies for automated sorting practices are currently rapidly changing these conditions, especially in high-wage countries (Sandberg and Pal, 2024).

Reuse aims to, in different ways, prolong the practical service life of an item by transferring it to a new owner (Sandin and Peters, 2018; D'Adamo *et al.*, 2022). Examples of circular business models in the textile and fashion industry that are based on the reuse activity include second-hand sales (sometimes including repair before the item can be sold again) and rental. In general, the reuse activity is vital for funding the broader textile and fashion CSC and is considered a more favourable alternative than recycling from a waste hierarchy perspective (Dahlbo *et al.*, 2017). In Europe, second-hand sales have seen a rapid development in recent years, based on a plethora of different sales concepts. Traditional low-price second-hand shops run by charities have been complemented by high-street vintage fashion boutiques, online shops managed by commercial players, as well as peer-to-peer platforms (e.g. Adam *et al.*, 2018; Sandberg and Hultberg, 2021; Hedegård, 2024)

Recycling is the final stage in the textile-to-textile loop and the process of transforming post-consumer textiles into new raw materials. It includes various methods such as mechanical and chemical recycling (Sandin and Peters, 2018; McKinsey, 2022; Sandberg and Pal, 2024). Recycling is currently dominated by cascading to low-value items such as wipers, and fibre-to-fibre recycling is still relatively limited in scale (Fashion-for-Good, 2022). McKinsey (2022) estimated that, with new recycling technologies in place, 70% of Europe's collected textile waste has the potential to be recycled into new textile fibres.

While these four activities collectively form the textile and fashion CSCs, they present distinct and often conflicting logistics and SCM requirements. For instance, the collection focuses on the "first-mile" challenge of managing highly fragmented, low-density material flows from consumers. In contrast, recycling operates as a heavy industrial process requiring high-density, standardised feedstock. Similarly, sorting acts as the critical information node where labour-intensive manual evaluation must be balanced against high-speed automated throughput. Despite these differences, current research predominantly treats the CSCs as a unified system or focuses on technical circularity (e.g. fibre, recycling technologies) rather than the organisational capabilities needed to manage these distinct logistics and supply chains. A significant research gap exists in identifying how these activity-specific LSCCs translate into multidimensional value. This study addresses this gap by providing a granular analysis that moves beyond a "one-size-fits-all" view of circularity, instead mapping the specific operational and strategic pathways required to achieve TBL value across the entire CSC.

2.2 Logistics and supply chain capabilities

LSCCs are in this research understood as abilities that are concerned with the combination and coordination of resources in the supply chain that allow for improved supply chain efficiency and effectiveness (e.g. Cho *et al.*, 2008; Haag *et al.*, 2019). This understanding draws on the resource-based view of the firm (e.g. Barney, 1991; Grant, 1991) and other strategic management research on organisational capabilities (e.g. da Cunha Bezerra *et al.*, 2020), where resources and capabilities are considered a major source for an organisation's sustainable competitive advantage. A distinction is often made between tangible as well as intangible resources on the one hand (e.g. physical assets, capital, patents, employees, etc), and capabilities on the other. In contrast to resources that are often considered something an organisation *has*, a capability is something an organisation *does*, namely combining and coordinating resources (Grant, 1991; Sandberg, 2025). As suggested by Wu *et al.* (2010), a capability "represent a distinctive and superior way of deploying, allocating, and coordinating resources."

In a supply chain context (e.g. Olavarrieta and Ellinger, 1997; Cho *et al.*, 2008; Kähkönen and Lintukangas, 2018; Haag *et al.*, 2019; Sandberg and Pal, 2024), which is the case in this research, LSCCs are concerned with the combination and coordination of tangible as well as intangible resources both within and across company borders in a supply chain (Cho *et al.*, 2008; Haag *et al.*, 2019). LSCCs allow for improved effectiveness and efficiency in supply chain performance (Cho *et al.*, 2008), which in turn is fundamental for value creation. Whereas improved efficiency typically creates value through reducing costs, waste generation, etc. "by doing things (more) right", improved effectiveness enables the supply chain "to do the right things". In a logistics and supply chain setting, this is related to an appropriate response to customer demands and other challenges that concern the overall strategic objectives and competitiveness of a company (e.g. McIntyre *et al*., 2025). As exemplified in a purchasing and supply context by Kähkönen and Lintukangas (2018), purchasing and supply practices may cause (economic) "savings", but these practices may also be considered to "produce" (economic) value. "Savings" through improved supply chain efficiency, as well as "production" of value through supply chain effectiveness, are in this study considered as two dimensions for value creation.

2.3 Value creation based on the triple bottom line

The understanding of value creation in logistics and SCM research is fragmented, and several competing interpretations have been suggested (Kähkönen and Lintukangas, 2018; Sandberg and Pal, 2024; McIntyre *et al*., 2025). A common view is that value creation begins by providing value to customers (e.g. Sirmon *et al*., 2007; Kähkönen and Lintukangas, 2018). When a company is able to provide more value to the customers than its competitors, a competitive advantage is achieved. Thus, value creation "occurs when a firm exceeds its competitors' ability to provide solutions to customers' needs while maintaining or improving its profit margins" (Sirmon *et al*., 2007). In our study, based on our understanding of LSCCs, we assume that this value creation relies on supply chain efficiency and effectiveness.

The concept of value creation is determined by the novelty and appropriateness of the utility of any product or service to increase efficiency and effectiveness of processes and/or outcomes, mostly by an organisation (Bowman and Ambrosini, 2000; Pal and Sandberg, 2024). In CSCs, the scope becomes broader than a single organisation, and value creation is not only an intra-organisational matter, but also conducted in collaboration with different actors and stakeholders such as consumer, collector, waste management company, recycler, etc (Beske and Seuring, 2014; Sandberg *et al*., 2018; Boruchowitch and Fritz, 2022; Pal and Sandberg, 2024). In addition, the "value" created is multidimensional and can offer both tangible and intangible benefits for multiple actors along this CSC (Jayaraman and Luo, 2007; Schenkel *et al*., 2015; Pal and Sandberg, 2024). From a sustainability perspective, value can be defined using the TBL coined by Elkington in the 1990s, which considers environmental and social value types in addition to economic value (Joyce and Paquin, 2016; Pal and Sandberg, 2024).

Economic value refers to the impact of the practices on the economic system (Elkington, 2004), for example, to secure liquidity and ensure profit (Khan *et al*., 2021). Economic value created through the CSC is commonly associated with optimisation, cost reduction, revenue generation and risk reduction (Schenkel *et al*., 2015; Ripanti and Tjahjono, 2019). In textile and fashion CSCs, this can be achieved through, for example, generating a higher resale price of the product, extending the after-market and service businesses, lower operation costs and increasing the potential for new raw material sourcing (Jayaraman and Luo, 2007; Schenkel *et al*., 2015; Pal, 2017).

Environmental value refers to engaging in practices that do no harm and do not compromise the environmental resources for future generations, including the consumption of resources that can be reproduced from living and non-living things (Elkington, 2004; Alhaddi, 2015; Khan *et al*., 2021). Through the CSC, environmental value can be created by, e.g. prolonging product lifecycles, preventing unnecessary waste, lowering energy consumption and emissions, and increasing awareness (Jayaraman and Luo, 2007; Schenkel *et al*., 2015; Pal, 2017; Ripanti and Tjahjono, 2019).

Social value contributes to the development of human and social capital, as well as giving back to the community (Elkington, 2004; Alhaddi, 2015; Khan *et al*., 2021).This dimension of value is highly related to stakeholders in the textile and fashion CSCs, such as consumers, labour suppliers and the community. From the consumer's perspective, social value can be created through offering better products, leading to higher satisfaction and loyalty, new servitisation schemes such as renting or extended after-sales services, and higher consumer awareness. From a firm's perspective, social value can be associated with, e.g. corporate social responsibility and extended responsibility shown by firms in the circular value chain (Jayaraman and Luo, 2007; Schenkel *et al*., 2015; Pal, 2017). The social value is also created through a fair labour market and through transparent information sharing along the supply chain, which contributes positively to the community and society as a whole. In summary, social value is often generated by collaborative networks of multi-stakeholders to achieve common goals (Ripanti and Tjahjono, 2019; Pal and Sandberg, 2024).

3. Methodology

This study employed an SLR methodology following the five principles for SLR in management and consisted of question formulation, locating studies, study selection and evaluation, analysis and synthesis, and reporting and using the results (Denyer and Tranfield, 2009).

3.1 Step 1: question formulation

The initial step involved formulating clear research questions to establish precise inclusion criteria for the review (Denyer and Tranfield, 2009). As established in the introduction, while the role of LSCCs in value creation is acknowledged, the literature remains fragmented, lacking a detailed outline of this linkage (Sandberg *et al*., 2018). This leads to the purpose of this study, which aims to explore the relationship between LSCCs and value creation based on the TBL in the textile and fashion CSCs. In addition to the primary research questions, a data extraction protocol was developed to systematically collect formal publication information (author, year and journal) and content-related details (paper type, methodology, key findings and future research suggestions) from each selected article.

3.2 Step 2: locating studies

Systematic reviews aim to locate, select and examine as much as possible the relevant research (Denyer and Tranfield, 2009). To ensure a comprehensive search of a fragmented research topic, an inclusive strategy was adopted. Search strings were constructed based on five key conceptual categories: Textile, CSC, Logistics, Value and Resources (see Table 1). To ensure relevance, articles were required to contain at least one keyword from the Textile, CSC and Logistics categories within their title, abstract or keywords. For the "Value" and "Resources" categories, the search was applied to all text fields to capture discussions that may not have been the primary focus of the articles.

The search was limited to peer-reviewed journal articles written in English and published between 2012 and 2025, consciously excluding conference papers, reports and book chapters to ensure academic quality. A baseline sample of potentially relevant literature was retrieved through searching bibliographic databases – i.e. SCOPUS and Business Source Premier (BSP). These two databases were selected as they have valid coverage of the logistics and SCM literature, including journals from, e.g. Taylor & Francis, Emerald, Elsevier and Springer (Sandberg and Jafari, 2018). This initial search yielded 1,168 articles from SCOPUS and 136 from BSP.

3.3 Step 3: study selection and evaluation

Systematic reviews adopt a set of explicit selection criteria to assess the relevance of each located article to see if it addresses the review questions in relation to the requirement of transparency of process (Denyer and Tranfield, 2009). To ensure a transparent and replicable selection process, explicit inclusion and exclusion criteria were defined using the Population, Exposure, Outcome (PEO) framework (e.g. Khan *et al*., 2003). In this study, the framework is

Table 1. Search string with keywords and searched field in databases

Categories	Textile	CSC	Logistics	Value	Resources
Keywords	textile* fashion* clothing* apparel* garment*	circular* revers* reuse* resale* second-hand* recyc* remake* re-manu* remanu*	logistic* "supply chain" operation* handling* transport* sorting* storing* collection*	value* valor* econom* environment* social* information* customer* image* cost*	resource* capabilit* abilit* skill* knowledge*
Searched field	title + abstract + keyword	title + abstract + keyword	title + abstract + keyword	All	All

used to structure the research questions and selection criteria for an SLR on value creation in textile and fashion CSCs. Population refers to the specific group or subjects being studied, and in this article, it is defined as the textile and fashion industry with a particular focus on CSCs. This means that the study will concentrate on articles that examine how this industry adopts circular practices to manage its resources and create value. Exposure are the factors or interventions that the population is exposed to and that may affect the outcomes of interest. In this study, the exposure is defined as the LSCCs within the context of textile and fashion CSCs. The research aims to explore how different LSCCs contribute to value creation in various circular activities – i.e. collection, sorting, reuse and recycling of post-consumer used textiles. The outcome refers to the effects or results that are being investigated in relation to the exposure. In this article, the outcome is the value creation in textile and fashion CSCs. The study aims to understand how different LSCCs contribute to the creation of economic, environmental and social value. This includes examining how LSCCs can lead to increased profitability, reduced environmental impact and improved social conditions within the textile and fashion industry. The detailed criteria are presented in Appendix I.

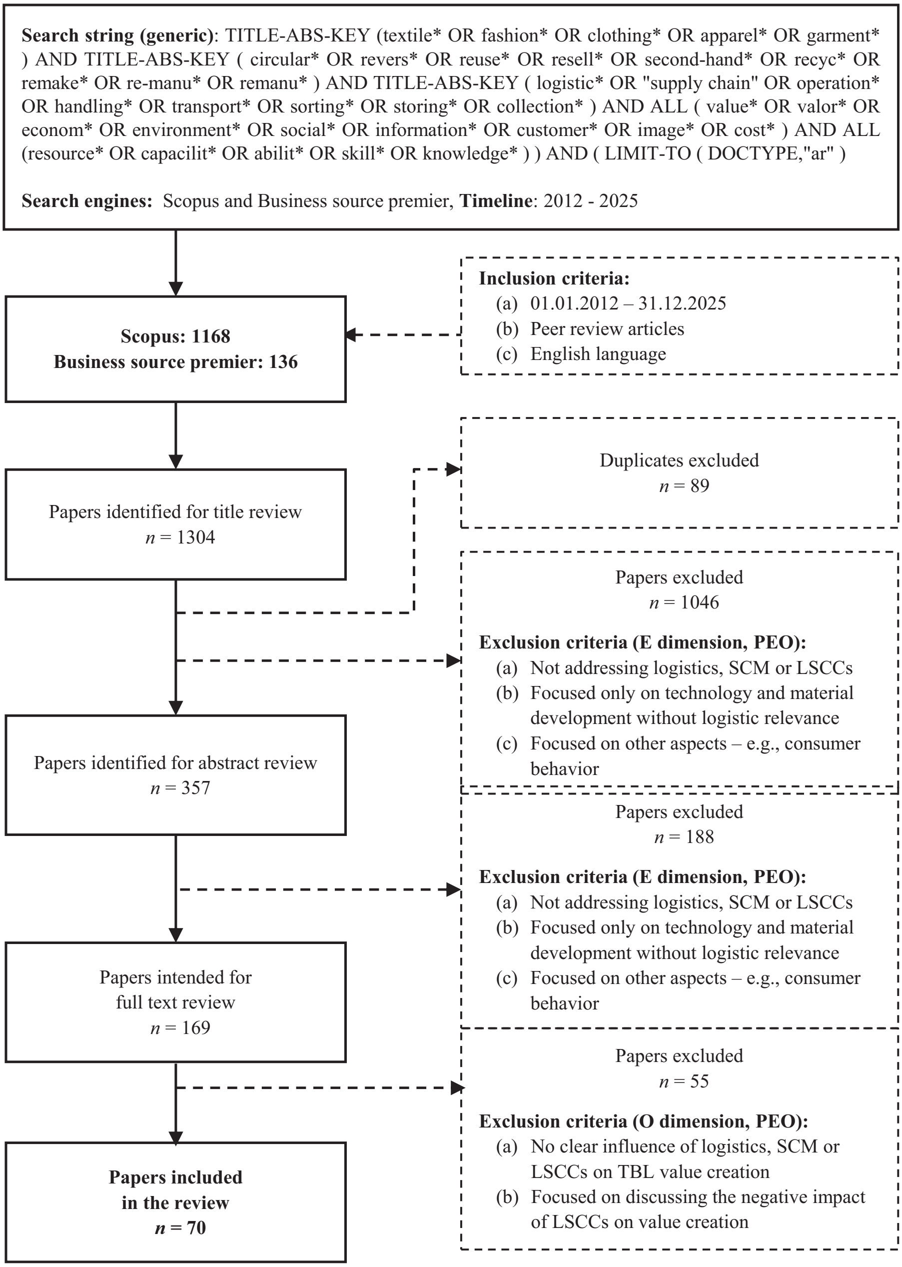
The multi-stage selection process is detailed in Figure 2. A preliminary selection was performed by screening titles and the journal domain. Then, duplicates were removed, resulting in 357 articles remaining in the sample pool. To ensure reliability, both researchers independently reviewed the abstracts against the selection criteria before discussing them, which led to the rejection of 188 articles. Following a full-text review of the remaining papers, a final sample of 70 articles was selected for synthesis.

3.4 Step 4: analysis and synthesis

In this step, the contents of the articles were broken down into constituent parts, following the aim of the analysis and then synthesised by going beyond mere description by recasting the information into new or different arrangements, and developing integrated knowledge that was not possible to gain by reading the individual article in isolation (Denyer and Tranfield, 2009). In this SLR, we followed a structured three-step process combining deductive and inductive approaches to move from broad data extraction to thematic development.

First, a deductive coding approach was applied using NVivo software, which is increasingly being used in systematic reviews to enhance the validity of the studies (Bazeley and Jacksom, 2013). Each relevant passage in the 70 articles was coded against a predefined, two-dimensional structure: the four CSC activities and the three TBL value types. Since these two conceptual frameworks are more structurally defined compared to the LSCCs, it is more suitable to adopt deductive coding for them. This initial coding also identified *barriers/challenges* and *drivers/enablers* to gain more understanding of the data. The coding scheme is presented in Appendix II. Second, the coded data was organised into a matrix to capture the interconnection between the two axes of coded data (the CSC activities and the TBL value types). As the LSCCs were a broadly identified concept and there was no pre-defined LSCCs within each textile and fashion CSC activity, it is more appropriate to code them inductively using first- and second-order coding. The statements within each cell of the matrix (e.g. all text related to “economic value” in “collection”) were analysed to identify first-order codes representing specific value-creating mechanisms. Then, these first-order codes were aggregated into second-order themes within each of the four CSC activities, which represent the LSCCs themselves. Finally, these LSCCs were then thematically grouped across all activities to form the four overarching capability themes reported in the findings.

Regarding the additional information coding of barrier/challenges and drivers/enablers, the data were used to support and confirm the main analysis. As a result of these codings, contextual factors influencing value creation in the textile and fashion CSCs were identified and presented at the end of the discussion section. A descriptive analysis of the articles’ quantitative aspects (e.g. publication year, journal) was also conducted to provide an overview of the research field.



Source: Authors own work

Figure 2. The overall literature selection process

4. Findings

The results of the SLR are presented below. First, we present the descriptive analysis regarding the overview of the reviewed articles. Then, the content analysis answering the two research questions is elaborated on accordingly.

4.1 Overview of the reviewed articles

The results of the study show that articles addressing LSCCs' contribution to value creation in textile CE have been published in a myriad of academic journals. Over half the articles are mere instances in the respective journals in which they have appeared, showing the dispersion of the research area. As shown in Table 2, *Journal of Cleaner Production* has been the most popular platform, with 13% of the articles published in it. As shown in Figure 3, there has been an increasing interest from researchers regarding logistics/SCM and textile and fashion CSCs, as reflected in an upward trend of the frequency of appearance in the relevant articles in the issues with the peak in 2025 resulting in 17 articles.

As presented in Figure 4, 71% of the reviewed articles are empirical research, while 29% are theoretical. Regarding empirical research, the qualitative case study is the most popular

Table 2. Journal of reviewed articles and frequency of appearance

Journal	Number of articles; %
Journal of Cleaner Production	9; 13%
Sustainability	7; 10%
Journal of Fashion Marketing and Management	3; 4%
Resources, Conservation and Recycling	3; 4%
Sustainable Production and Consumption	3; 4%
The International Journal of Logistics Management	3; 4%
Waste Management	3; 4%
Sustainable Development	2; 3%
Other (37 different journals)	1; 1%

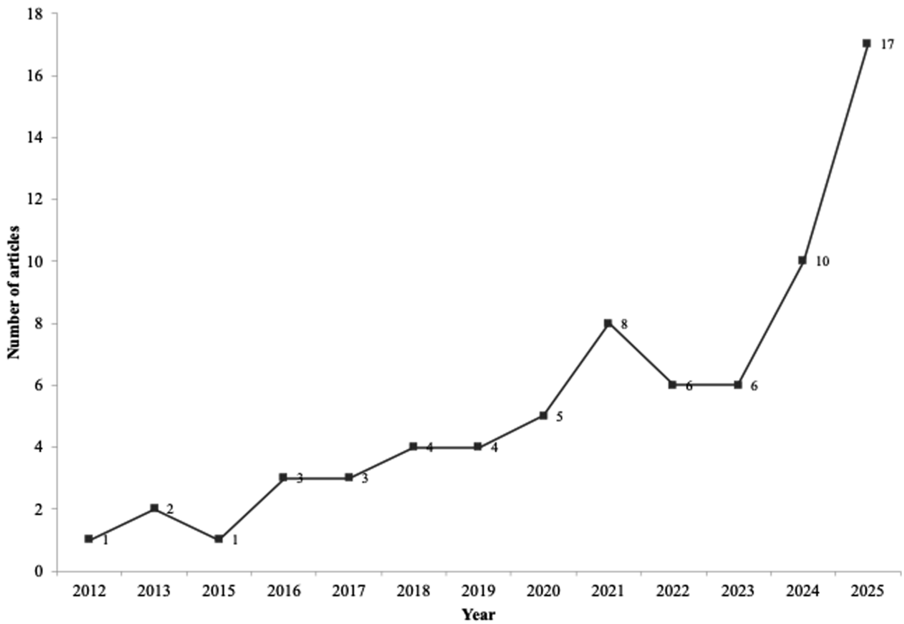


Figure 3. Publication year of the articles

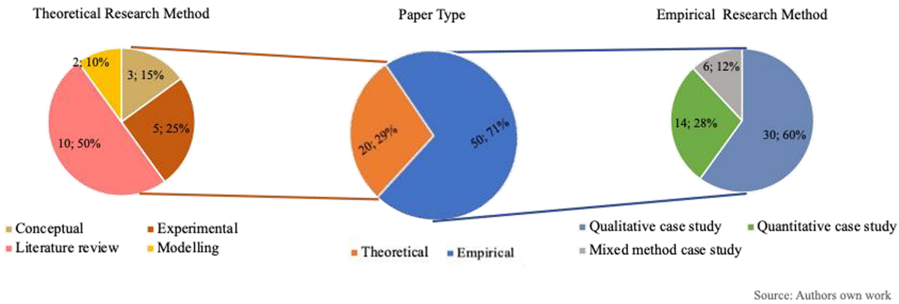


Figure 4. Paper type and research method in the reviewed articles

research method, as adopted by 30 articles. The common data collection techniques are secondary data, interview and observation. 14 articles adopted the quantitative case study method and the remaining six empirical research are mixed method case studies. Within theoretical research, the most popular method is literature review, adopted by 10 articles, followed by experimental research.

4.2 Logistics and supply chain capabilities' contribution to value creation in textile circular supply chains

Based on our framework, the thematic analysis identified a range of LSCCs critical for value creation across the four activities of the textile and fashion CSC: collection, sorting, reuse and recycling. To address the inherent complexity and potential overlap between these capabilities, the findings are organised into a two-pillar framework. This structure distinguishes between the hard and soft dimensions of circular operations to clarify how different types of capabilities contribute to the TBL.

The first pillar, **operational LSCCs**, refers to the strategic design and management of tangible assets, infrastructure and technical processes required to facilitate material flow and processing. This pillar focuses on the hard side of logistics and supply chain, such as network configuration, technological optimisation and quality control. The second pillar, **strategic LSCCs**, encompasses the use of intangible resources, business model innovation and stakeholder alliances. This pillar represents the social and human element of the circular system, focusing on coordination, information management and long-term ecosystem viability.

4.2.1 LSCCs for value creation in collection. Collection is the starting point of textile and fashion CSCs, serving as the critical point that determines volume, flow and quality of the entire circular system (Dahlbo *et al*., 2017; Sandberg *et al*., 2018; Pal *et al*., 2019; Zhuravleva and Aminoff, 2021). Several LSCCs contribute to different types of value creation in the collection activity as shown in Table 3. Within this activity, the two-pillar structure highlights a balance between the physical accessibility of the infrastructure and the strategic motivation of donors.

4.2.1.1 Operational LSCCs for collection. "**Developing and managing integrated collection system**" concerns the strategic establishment of diverse collection channels and their synergy with established logistics networks. This LSCC coordinates resources such as collection points, collection bins, logistics providers and IT systems to increase donor convenience and collection rates. This includes deploying unmanned collection boxes, convenient in-store points (Sandberg *et al*., 2018; Pal *et al*., 2019) and experimenting with services like at-home pick-ups or door-to-door services (Xu *et al*., 2022; Sandberg, 2023). This LSCC rests on the parallel operation of multiple donation alternatives to cater to different markets (Sandberg, 2023) and requires proper infrastructure for collection and storage (Pal,

Table 3. LSCCs for value creation in collection with references

LSCCs in collection		TBL value creation			
Pillar	LSCC	Econ	Envi	Soc	References
Operational	Developing and managing integrated collection system	X	X	X	Kim and Kim (2016), Fischer and Pascucci (2017), Pal 2017, Paras *et al*. (2018), Sandberg *et al*. (2018), Pal *et al*. (2019), Kazancoglu *et al*. (2020), Xu *et al*. (2022), Sandberg (2023), Sumo *et al*. (2023), Charnley *et al*. (2024), Denizel and Schumm (2024), Hellström and Olsson (2024), Morell-Delgado *et al*. (2024), Soares *et al*. (2024), Thomas *et al*. (2024), Vermeyen *et al*. (2024), Zhuravleva (2024), Arevalo-Ascanio *et al*. (2025), Burini *et al*. (2025), Dissanayake and Pal (2025), Dukovska-Popovska *et al*. (2025), Jestratijevic and Senthil (2025), John and Rahman (2025), Kim *et al*. (2025), Wu *et al*. (2025), Zaidi and Chandra (2025)
	Optimising collection operations for quality and efficiency	X	X	X	Dissanayake and Sinha (2015), Dahlbo *et al*. (2017), Nørup *et al*. (2019), Kazancoglu *et al*. (2020), Wang *et al*. (2020), Kamble and Behera (2021), Zhuravleva and Aminoff (2021), Jäämaa and Kaipia (2022), Dukovska-Popovska *et al*. (2023), Martikkala *et al*. (2023), Sandberg (2023), Sumo *et al*. (2023), Al Amin and Baldacci (2024), Hellström and Olsson (2024), Arevalo-Ascanio *et al*. (2025), Cafforio *et al*. (2025), Dissanayake and Pal (2025), Dukovska-Popovska *et al*. (2025), Hassan *et al*. (2025), Jestratijevic and Senthil (2025), John and Rahman (2025), Wu *et al*. (2025)
Strategic	Fostering stakeholder engagement and partnership	X	X	X	Brooks (2013), Dissanayake and Sinha (2015), O'Reilly and Kumar (2016), Paras *et al*. (2018), Pal *et al*. (2019), Wang *et al*. (2020), Zhuravleva and Aminoff (2021), Jäämaa and Kaipia (2022), Xu *et al*. (2022), Martikkala *et al*. (2023), McCauley and Jestratijevic (2023), Sandberg (2023), Sumo *et al*. (2023), Al Amin and Baldacci (2024), Denizel and Schumm (2024), Hellström and Olsson (2024), Morell-Delgado *et al*. (2024), Soares *et al*. (2024), Thomas *et al*. (2024), Zhuravleva (2024), Arevalo-Ascanio *et al*. (2025), Burini *et al*. (2025), Dissanayake and Pal (2025), Dukovska-Popovska *et al*. (2025), Hassan *et al*. (2025), Jestratijevic and Senthil (2025), Ye and Lau (2025), Zaidi and Chandra (2025)
	Circular business planning and supply management	X	X	X	Brooks (2013), Dissanayake and Sinha (2015), Paras *et al*. (2018), Sandberg *et al*. (2018), Pal *et al*. (2019), Jäämaa and Kaipia (2022), Xu *et al*. (2022), Dukovska-Popovska *et al*. (2023), Hinkka *et al*. (2023), Martikkala *et al*. (2023), Sandberg (2023), Sumo *et al*. (2023), Al Amin and Baldacci (2024), Charnley *et al*. (2024), Denizel and Schumm (2024), Hellström and Olsson (2024), Soares *et al*. (2024), Arevalo-Ascanio *et al*. (2025), Jestratijevic and Senthil (2025), Kählig *et al*. (2025), Kim *et al*. (2025), Zaidi and Chandra (2025)

Note(s): Econ = Economy, Envi = Environmental, Soc = Social

2017; Sumo *et al.*, 2023). A crucial component is the integration of forward and reverse logistics flows – for instance, utilising the same capacity that delivers new clothes to also pick up post-consumer textiles (Pal *et al.*, 2019; Sandberg, 2023). For at-home services, e-commerce packaging can be repurposed for clothing donations, combining last-mile delivery with first-mile pickup operations to improve resource efficiency (Hellström and Olsson, 2024). Furthermore, developing regional "textile waste-sheds" and localised circular economies is essential to reduce emissions and costs associated with long-distance transport (Thomas *et al.*, 2024).

Regarding *economic* value creation, higher quality from in-store and well-managed collection points yields greater financial returns by reducing material contamination (Pal *et al.*, 2019). Financial feasibility is further enhanced by regionalised collection and shorter supply chains that minimise transportation expenditure (Thomas *et al.*, 2024; Kim *et al.*, 2025), while integrated logistics ensure a regular flow and optimise vehicle fill rates to keep the costs low (Pal *et al.*, 2019). From an *environmental* perspective, this system increases the volume of textiles diverted from landfills (Paras *et al.*, 2018; Sandberg *et al.*, 2018), reducing the need for virgin materials and lowering CO_2 emissions through integrated or minimised transport especially in densely populated urban areas (Dahlbo *et al.*, 2017; Burini *et al.*, 2025). Additionally, low-carbon channels like bike trailers provide carbon-neutral alternatives for neighbourhood-level pickups (Jestratijevic and Senthil, 2025). *Social* value is created by enhancing donor accessibility and convenience through multi-channel collection (Pal *et al.*, 2019; Sandberg, 2023), facilitating wider participation in sustainable practices (Paras *et al.*, 2018). Proximity to households via decentralised or curbside models is a critical factor in driving community participation (Dukovska-Popovska *et al.*, 2025).

"*Optimising collection operations for quality and efficiency*" focuses on the technical execution of collection processes, leading to improved resource coordination. This includes deploying advanced technologies like IoT-enabled "smart bins" and mobile applications to track fill rates in real-time, optimising routes and reducing costs (Martikkala *et al.*, 2023; Arevalo-Ascanio *et al.*, 2025; Dissanayake and Pal, 2025). Agile logistics networks with dynamic rerouting and real-time monitoring are required to manage operational volatility and maintain circular viability (Cafforio *et al.*, 2025). Standardising loading units through modular containers and implementing autonomous robots further improve asset utilisation and collection speed (Wu *et al.*, 2025). Despite complexity, Blockchain can enhance transparency for a more efficient CSC (Wang *et al.*, 2020). This LSCC also involves practices that ensure textiles remain dry and uncontaminated (Jäämaa and Kaipia, 2022; Hinkka *et al.*, 2023). To preserve material quality, attended or indoor points are prioritised, as unsupervised outdoor containers often lead to contamination from general waste or moisture (Arevalo-Ascanio *et al.*, 2025; Dukovska-Popovska *et al.*, 2025). Coordinating these processes and educating consumers are decisive for the economic viability of the textile and fashion CSC to achieve the effective outcome of a high-value feedstock (Zhuravleva and Aminoff, 2021), while real-time monitoring ensures compliance with sustainability regulations (Al Amin and Baldacci, 2024).

This LSCC creates *economic* value by improving batch value and ensuring materials are not downgraded to waste due to contamination (Dissanayake and Sinha, 2015; Dahlbo *et al.*, 2017; Zhuravleva and Aminoff, 2021). Dynamic collection technology further decreases operating time and improves vehicle loading (Martikkala *et al.*, 2023). Operational costs are also reduced by delegating preliminary "rough sorting" (identifying potential reuse vs. recycling) to consumers at the point of disposal, lowering downstream labour intensity (Dukovska-Popovska *et al.*, 2025). Furthermore, autonomous robotics provides higher operational speeds and accuracy compared to manual systems (Hassan *et al.*, 2025). *Environmental* value is realised as higher material quality prevents waste and ensures higher utilisation in subsequent activities (Dahlbo *et al.*, 2017; Jäämaa and Kaipia, 2022). From a *social* perspective, effective systems prevent overflowing bins, improving community aesthetics and fostering a recycling culture (Martikkala *et al.*, 2023; Sumo *et al.*, 2023). Social value is also enhanced by digitalising the connection between item owners and circular networks, providing an accessible entry point for sustainable participation (Hassan *et al.*, 2025).

4.2.1.2 Strategic LSCCs for collection. "**Fostering stakeholder engagement and partnerships**" concerns the relational and reputational side of collection. Public awareness is driven through communication channels and loyalty programs to educate and motivate takeback participation (Jäämaa and Kaipia, 2022; Sandberg, 2023; Thomas *et al.*, 2024). Framing consumers as "co-producers" is critical for voluntary collection success (Arevalo-Ascanio *et al.*, 2025), requiring targeted campaigns for groups with lower awareness, such as young people (Morell-Delgado *et al.*, 2024; Soares *et al.*, 2024). This LSCC involves establishing strategic partnerships with municipalities, charities and real estate agencies to align objectives and share resources for expanding networks into community spaces (Pal *et al.*, 2019; Zhuravleva and Aminoff, 2021; Jestratijevic and Senthil, 2025). Firms – such as fashion brands, retailers – leverage this involvement to enhance brand image as sustainable actors (Sandberg *et al.*, 2018). For first-mile collection, multi-stakeholder collaboration between fashion retailers and local logistics providers is essential (Burini *et al.*, 2025).

For *economic* value, this LSCC boosts profitability through increased volume and higher-quality material acquisition via participation in collection schemes (e.g. Pal *et al.*, 2019; Jäämaa and Kaipia, 2022), while reducing costs through resource sharing (e.g. Dissanayake and Sinha, 2015; Sumo *et al.*, 2023). Sharing between charities and private firms is particularly effective for managing high operational overheads of low-value materials (Dissanayake and Pal, 2025). *Environmental* value is generated by diverting material from waste streams through increased participation (Paras *et al.*, 2018), especially when consumers are strategically positioned as co-producers who facilitate cleaner, separate collection (Arevalo-Ascanio *et al.*, 2025). Local partnerships also minimise textile exports, reducing transport emissions (Dissanayake and Sinha, 2015; Dukovska-Popovska *et al.*, 2023; Thomas *et al.*, 2024). Finally, it contributes to *social* value creation through an improved sustainability image and corporate responsibility (O'Reilly and Kumar, 2016; Sandberg *et al.*, 2018). Personal interaction at collection points and radical transparency regarding textile destinations are vital for building donor trust and societal commitment (Soares *et al.*, 2024; Zhuravleva, 2024).

"*Circular business planning and supply management*" concerns developing business models to manage the demand-supply interface for CSCs. This involves designing scalable systems and coordinating informational resources to match supply with sorting demand (Paras *et al.*, 2018; Hinkka *et al.*, 2023). Examples include using loyalty programs to dynamically direct material flows via seasonal campaigns (Sandberg, 2023). Technologies like Blockchain and Digital Product Passports (DPP) mitigate information asymmetry, providing immutable and transparent records (e.g. Wang *et al.*, 2020; Al Amin and Baldacci, 2024). This LSCC supports strategic decision-making through collective data stewardship and multi-criteria assessments that balance efficiency with environmental and social externalities (Kim and Kim, 2016; Arevalo-Ascanio *et al.*, 2025; Kim *et al.*, 2025). Due to regulatory instruments like Extended Producer Responsibility (EPR) and carbon taxation, firms develop this LSCC to internalise end-of-life management costs and invest in traceability (Charnley *et al.*, 2024; Arevalo-Ascanio *et al.*, 2025).

A well-designed circular business model is fundamental for *economic* value, ensuring profitability and economies of scale (Sandberg *et al.*, 2018; Hinkka *et al.*, 2023). Regulatory drivers like EPR force financial responsibility shifts, creating incentives for design-for-longevity (Kählig *et al.*, 2025). For *environmental* value, alignment maximises recovery by ensuring a stable feedstock, while localised business models reduce dependence on overseas export (Dissanayake and Sinha, 2015). Measuring logistics performance, such as CO_2 emissions, ensures sustainability motivation (Sandberg, 2023). Furthermore, multi-criteria assessment dashboards ensure business scaling is balanced against externalities for a net positive impact (Arevalo-Ascanio *et al.*, 2025; Kim *et al.*, 2025). Finally, *social* value is created through business processes that improve convenience and inclusive culture (Sandberg, 2023). "Born circular" startups leverage localised micro-loops to keep material value within the community, fostering local economic and social resilience (Jestratijevic and Senthil, 2025).

4.2.2 LSCCs for value creation in sorting. Sorting is the most critical activity in defining value textile CSCs, as it determines the subsequent pathway for collected materials – either towards high-value reuse or lower-value recycling and material recovery (e.g. Botticello, 2012; Sandberg *et al*., 2018; Paras *et al*., 2019). The effectiveness of this activity relies on a tension between technical industrial scale and skilled manual evaluation. The identified LSCCs are presented in Table 4.

4.2.2.1 Operational LSCCs for sorting. "**Developing and configuring sorting networks and infrastructure**" is the ability to strategically plan and organise the reverse supply chain optimise material flows. This LSCC involves navigating the strategic tension between "speculative local sorting" and "postponed centralised sorting", to balance transport proximity against industrial economy of scale (Hinkka *et al*., 2023). Recent studies emphasise that regionalised textile waste-sheds and localised sorting hubs are essential to reduce carbon emissions and transportation costs (Thomas *et al*., 2024). Furthermore, hyperconnected logistics hubs and resilient infrastructure with real-time monitoring capabilities are recognised as critical for adapting sorting flows to operational volatility in disrupted markets (Cafforio *et al*., 2025; Zaidi and Chandra, 2025). Therefore, the core of this LSCC is to coordinating resources (e.g. facilities, transport, labour, capital) across the CSC to balance competing objectives – i.e. cost-efficiency and quality. It requires developing specialised facilities capable of handling varied textile streams while balancing significant infrastructure investment costs against long-term logistics efficiency (Zhuravleva and Aminoff, 2021; Dukovska-Popovska *et al*., 2023).

Regarding *economic* value creation, this LSCC allows firms to optimise the trade-off between local processing and transportation costs (Pal *et al*., 2019). Postponed sorting at centralised hubs enables lower per-unit processing costs through automation, while speculative local sorting improves overall batch value by processing materials before quality degrades (Hinkka *et al*., 2023) and minimises long-distance transportation costs (Thomas *et al*., 2024; Kim *et al*., 2025). From an *environmental* perspective, local sorting hubs significantly reduce ton-kilometres of unsorted textiles, directly lowering the system's carbon footprint (Zhuravleva and Aminoff, 2021; Thomas *et al*., 2024). *Social* value is created through regional networks that strengthen the domestic CE, fostering localised resilience and stable employment (Paras *et al*., 2019; Jestratijevic and Senthil, 2025).

"*Developing and utilising skilled manual sorting*" focuses on the human element and the ability to sort according to the waste hierarchy. Manual sorting relies on tacit knowledge to identify high-value luxury or vintage pieces that current sensors cannot yet effectively categorise (Botticello, 2012; Pal *et al*., 2019). This LSCC involves a skilled eye and a "cascading approach" where items are first evaluated for reuse before being relegated to lower-quality classifications (Sandberg *et al*., 2018; McCauley and Jestratijevic, 2023). To preserve this quality, studies emphasise the importance of attended indoor sorting environments to protect garments from humidity and contamination (Arevalo-Ascanio *et al*., 2025; Dukovska-Popovska *et al*., 2025). This also contributes to the brand value of the organisations, as sorting standards become synonymous with their reliability (Botticello, 2012).

For *economic* value, manual sorting is a primary driver of profitability, as identifying high-margin items for reuse yields greater returns than producing recycling feedstock (e.g. Sandberg *et al*., 2018; Pal *et al*., 2019; Xu *et al*., 2022). *Environmental* value is maximised through this cascading approach that prioritises reuse to save energy and reduce the need for virgin fibres (Sandin and Peters, 2018; Paras *et al*., 2019). Implementing these practices can help a single facility avoid atmospheric releases in the order of 0.6–1.1 million tonnes of CO_2-equivalents (Nørup *et al*., 2019). Finally, *social* value is realised through specialised job creation for semi-skilled persons and the ability to provide clothing to people in need through donations or low-cost sales (Sandberg *et al*., 2018; Paras *et al*., 2019).

"*Leveraging automated sorting technologies*" refers to the ability to invest in, develop and operate advanced industrial-scale technologies primarily to handle the non-reusable fraction

Table 4. LSCCs for value creation in sorting with references

LSCCs in sorting		TBL value creation			
Pillar	LSCC	Econ	Envi	Soc	References
Operational	Developing and configuring sorting networks and infrastructure	X	X	X	Paras *et al.* (2018), Pal *et al.* (2019), Dukovska-Popovska *et al.* (2023), Hinkka *et al.* (2023), Sumo *et al.* (2023), Morell-Delgado *et al.* (2024), Thomas *et al.* (2024), Vermeyen *et al.* (2024), Zhuravleva (2024), Cafforio *et al.* (2025), Dissanayake and Pal (2025), Dukovska-Popovska *et al.* (2025), Jestratijevic and Senthil (2025), Kim *et al.* (2025), Wu *et al.* (2025), Zaidi and Chandra (2025)
	Developing and utilising skilled manual sorting	X	X	X	Botticello (2012), Nørup *et al.* (2018, 2019), Paras *et al.* (2018), Sandberg *et al.* (2018), Sandin and Peters (2018), Pal *et al.* (2019), Sandvik and Stubbs (2019), Riba *et al.* (2020), Kamble and Behera (2021), Noh (2021), Xu *et al.* (2022), Hinkka *et al.* (2023), McCauley and Jestratijevic (2023), Soares *et al.* (2024), Zhuravleva (2024), Dissanayake and Pal (2025), Jestratijevic and Senthil (2025), John and Rahman (2025), Kählig *et al.* (2025)
	Leveraging automated sorting technologies	X	X		Kumar *et al.* (2016), Fischer and Pascucci (2017), Paras *et al.* (2018, 2019), Pal *et al.* (2019), Sandvik and Stubbs (2019), Lin *et al.* (2020), Riba *et al.* (2020, 2022), Cura *et al.* (2021), Noh (2021), Zhuravleva and Aminoff (2021), Majumdar *et al.* (2022), Xu *et al.* (2022), Hinkka *et al.* (2023), McCauley and Jestratijevic (2023), Al Amin and Baldacci (2024), Charnley *et al.* (2024), Elli *et al.* (2024), Morell-Delgado *et al.* (2024), Burini *et al.* (2025), Dissanayake and Pal (2025), Hassan *et al.* (2025), John and Rahman (2025), Wu *et al.* (2025), Ye and Lau (2025)
Strategic	Fostering ecosystem alignment and market standardisation	X	X	X	Dissanayake and Sinha (2015), Pal (2017), Sandberg *et al.* (2018), Pal *et al.* (2019), Paras *et al.* (2019), Zhuravleva and Aminoff (2021), Xu *et al.* (2022), Dukovska-Popovska *et al.* (2023, 2025), Hinkka *et al.* (2023), McCauley and Jestratijevic (2023), Sandberg (2023), Sumo *et al.* (2023), Al Amin and Baldacci (2024), Charnley *et al.* (2024), Denizel and Schumm (2024), Zhuravleva (2024), Burini *et al.* (2025), Dissanayake and Pal (2025), Hassan *et al.* (2025), Kählig *et al.* (2025), Kim *et al.* (2025)

Note(s): Econ = Economy, Envi = Environmental, Soc = Social for recycling. This involves coordinating capital resources, advanced equipment (e.g. near-infrared (NIR) sensors and robotics), databases and specialised facilities to improve sorting efficiency (Cura *et al.*, 2021; Noh, 2021). Technologies are essential for efficiently handling large volumes of post-consumer textiles where manual sorting would be too expensive and time-consuming (Kumar *et al.*, 2016; Fischer and Pascucci, 2017). Research demonstrates that implementing autonomous robots and AI-driven systems can provide higher operational speeds and handling accuracy (Hassan *et al.*, 2025; Wu *et al.*, 2025). Integrating DPPs at this stage further facilitates immediate identification of material potential (Burini *et al.*, 2025). A fundamental component of this LSCC is standardising sorting processes to transition sorting from a manual craft to a high-throughput industrial process (Sandberg *et al.*, 2018).

This LSCC creates *economic* value through industrial-scale efficiency, reducing production costs per unit (Paras *et al.*, 2019; Hinkka *et al.*, 2023), which represents a major barrier to the viable textile CSC (Sumo *et al.*, 2023). *Environmental* value is created by ensuring high purity in material streams, which facilitates high-quality material recovery (Paras *et al.*, 2019; Riba *et al.*, 2022). However, literature indicates that automation serves as a necessary support for scalability rather than a direct creator of social value (Fischer and Pascucci, 2017; Paras *et al.*, 2019).

4.2.2.2 Strategic LSCCs for sorting. "**Fostering ecosystem alignment and market standardisation**" concerns the coordination of inter-organisational visions and resources. This involves aligning and collaborating with supply chain partners like recyclers, retailers and charities to ensure that the visions and objectives of all stakeholders are synchronised (McCauley and Jestratijevic, 2023). A critical element is matching sorted supply to recycling demand at a granular level (Dukovska-Popovska *et al.*, 2023) through feedstock standardisation, which establishes waste grade standards and predictable pricing models (Xu *et al.*, 2022; McCauley and Jestratijevic, 2023). This alignment is increasingly supported by cloud-based information exchange, which standardises data between sorters and recyclers to ensure material purity and higher economic value (Burini *et al.*, 2025). Additionally, this LSCC encompasses developing business models for local and regional markets to treat materials in close proximity to where they emerge, thereby reducing reliance on overseas exports (Dissanayake and Sinha, 2015; Zhuravleva and Aminoff, 2021). Recent studies highlight that this LSCC can be achieved through DPP and Blockchain technology, which provide immutable, transparent records that mitigate information asymmetry (Al Amin and Baldacci, 2024; Charnley *et al.*, 2024).

Regarding *economic* value creation, collaboration allows organisations to access unique partner competencies and physical resources that would be unachievable in isolation (Pal *et al.*, 2019; Sandberg, 2023). By serving specific quality needs of recyclers through standardisation, firms forge reliable markets and reduce the financial risk of holding mismatched or unsold sorted materials (Dukovska-Popovska *et al.*, 2023). Strategic resource sharing between charities and private firms is particularly effective in managing operational overheads for low-value materials (Dissanayake and Pal, 2025). From an *environmental* perspective, localised business models significantly minimise emissions and reduce the environmental footprint associated with global textile exports (Dissanayake and Sinha, 2015; Zhuravleva and Aminoff, 2021). Finally, this LSCC creates *social* value by coordinating diverse stakeholders, minimising the negative social impacts of exporting waste to developing countries (Zhuravleva and Aminoff, 2021; McCauley and Jestratijevic, 2023), while creating localised employment opportunities (Paras *et al.*, 2019).

4.2.3 LSCCs for value creation in reuse. Reuse represents the highest level of value retention within post-consumer textile CSCs, as it extends the functional life of a garment without breaking down its physical structure (Dahlbo *et al.*, 2017; Sandberg *et al.*, 2018). Succeeding in this activity requires the capability to transform "waste" into a desirable product while ensuring it is accessible and trusted by consumers. While studies about second-hand markets are common, research on logistics and supply chain perspectives of reuse has evolved from fragmented insights into a sophisticated system requiring operational and strategic coordination (Sandberg, 2023; Hellström and Olsson, 2024). The identified LSCCs are presented in Table 5.

Table 5. LSCCs for value creation in reuse with references

LSCCs in reuse		TBL value creation			
Pillar	LSCC	Econ	Envi	Soc	References
Operational	Developing and managing infrastructure and reconditioning processes	X	X	X	Botticello (2012), Dissanayake and Sinha (2015), Dahlbo *et al.* (2017), Paras *et al.* (2018), Sandberg *et al.* (2018), Pal *et al.* (2019), Dissanayake and Pal (2025), Dukovska-Popovska *et al.* (2025), Jestratijevic and Senthil (2025), Laukkanen *et al.* (2025), Wu *et al.* (2025), Ye and Lau (2025), Zulu and Muposhi (2025)
Strategic	Developing circular business models and enhancing market accessibility	X	X	X	Brooks (2013), Dissanayake and Sinha (2015), Dahlbo *et al.* (2017), Paras *et al.* (2018), Sandberg *et al.* (2018), Pal *et al.* (2019), dos Santos and de Souza Campos (2021), D'Adamo *et al.* (2022), McCauley and Jestratijevic (2023), Sandberg (2023), Elli *et al.* (2024), Hellström and Olsson (2024), Vermeyen *et al.* (2024), Zhuravleva (2024), Burini *et al.* (2025), Dissanayake and Pal (2025), Gwa *et al.* (2025), Hassan *et al.* (2025), Jestratijevic and Senthil (2025), John and Rahman (2025), Wu *et al.* (2025)
	Fostering responsible consumption and consumer engagement	X	X	X	Joyner Armstrong and Park (2020), Brydges (2021), D'Adamo *et al.* (2022), Xu *et al.* (2022), Sandberg (2023), Elli *et al.* (2024), Soares *et al.* (2024), Laukkanen *et al.* (2025)

Note(s): Econ = Economy, Envi = Environmental, Soc = Social

4.2.3.1 Operational LSCCs for reuse. "**Developing and managing infrastructure and reconditioning processes**" is the fundamental LSCC required to establish and operate the physical assets and flows needed to revalue second-hand textiles (Paras *et al.*, 2018). This involves coordinating facilities for cleaning, repairing, and preparing garments to meet quality standards for second-hand market (Laukkanen *et al.*, 2025; Zulu and Muposhi, 2025). Modern infrastructure is increasingly defined by specialised reconditioning hubs that utilise digital tracking systems and integrated reverse logistics to handle diverse textile streams efficiently (Hellström and Olsson, 2024; Dissanayake and Pal, 2025). Successful networks also leverage existing e-commerce delivery packaging and neighbourhood-level logistics, such as bike trailers, to create resource-efficient and carbon-neutral re-distribution channels (Hellström and Olsson, 2024; Jestratijevic and Senthil, 2025). Furthermore, this LSCC involves assessing fabric durability to ensure extended functional life (Laukkanen *et al.*, 2025).

Regarding *economic* value creation, proper infrastructure ensure maximum value is extracted from collected garments, providing a prerequisite for a sustainable reuse model (Botticello, 2012; Paras *et al.*, 2018). Developing unique warehouse management systems optimises the storage and retrieval of individual used garments (Dissanayake and Pal, 2025). For *environmental* value, these facilities enable garment life extension, which is crucial for displacing the production of new items (Dahlbo *et al.*, 2017). Regionalised exchanges of materials through localised platforms also help reduce transport-related emissions (Kim *et al.*, 2025). *Social* value is created through reconditioning processes utilising low-technological expertise to provide stable job opportunities for semi-skilled workers and people at the Base of the Pyramid (Sandberg *et al.*, 2018).

4.2.3.2 Strategic LSCCs for reuse. "**Developing circular business models and enhancing market accessibility**" focuses on strategic coordination of logistics to ensure commercial viability and inclusivity of reuse. This involves designing business model initiatives – such as clothing libraries, renting and specialised second-hand platforms – that adapt to regional merchandising nuances (Sandberg, 2023). Startups that are "born circular" and partnership between well-known brands and community-based organisations keep material value within the community and foster local resilience (Elli *et al.*, 2024; Jestratijevic and Senthil, 2025). Innovation in this area includes Product-as-a-Service models and subscription platforms that allow for on-demand stock replenishment and reduced required inventory (Burini *et al.*, 2025; Gwa *et al.*, 2025; Wu *et al.*, 2025). A primary objective is enhancing product accessibility to offer high-quality clothing at accessible prices (Brooks, 2013; D'Adamo *et al.*, 2022).

In terms of *economic* value, circular business models allow firms such as fashion retailers to develop local markets, leading to higher profit potential and productivity innovations (Dissanayake and Sinha, 2015). Firms can leverage strategic financing models, such as leasing digital infrastructure to mitigate initial costs (Hassan *et al.*, 2025). For charity organisations, this LSCC provides the means to generate monetary profit to fund their social missions (Sandberg *et al.*, 2018). *Environmental* value is created as this LSCC facilitate life-extension practices that displace virgin resource extraction (Dahlbo *et al.*, 2017). Finally, *social* value is realised through increased product accessibility for lower-income consumers and the provision of affordable clothing (D'Adamo *et al.*, 2022; Jestratijevic and Senthil, 2025).

"Fostering responsible consumption and consumer engagement" concerns the relational and informational work needed to build trust in second-hand textiles that finally change consumer behaviour. This LSCC utilises marketing and loyalty programs – such as vouchers or rewards for donations – to nudge consumers towards more circular lifestyles (Sandberg, 2023). It increasingly relies on digital information management, using tools like QR-code systems and DPPs to provide transparent data regarding a product's history, composition and reliability (Xu *et al.*, 2022; Ye and Lau, 2025). Consumer trust is bolstered by addressing psychological barriers through intentional rewards, gamification and sustainability statistics that quantify personal environmental impact (Hellström and Olsson, 2024; Hassan *et al.*, 2025; Zulu and Muposhi, 2025).

Regarding *economic* value creation, data transparency reduces the perceived risk of second-hand purchases, expanding the market (Xu *et al.*, 2022; Laukkanen *et al.*, 2025). *Environmental* value is fostered as efforts shift consumption patterns towards responsible lifestyles (D'Adamo *et al.*, 2022). Finally, *social* value is created through consumer empowerment, as reliable traceability enables consumers to participate confidently in the loop (Joyner Armstrong and Park, 2020; Elli *et al.*, 2024), and finally change consumer behaviour towards circularity.

4.2.4 LSCCs for value creation in recycling. Recycling constitutes the final loop of the CSCs, where textiles that are no longer suitable for reuse are transformed into secondary raw materials (Dahlbo *et al.*, 2017). Succeeding in this activity requires high-intensity industrial processing and a deeply integrated market ecosystem to compete with virgin material production. Reflecting this dual requirement, the identified LSCCs are presented in Table 6.

4.2.4.1 Operational LSCCs for recycling. "**Developing and configuring industrial networks and recycling processes**" concerns the strategic design and implementation of physical flows to minimise costs and maximise resource efficiency. This LSCC involves utilising established reverse flow capacities rather than separate logistics channels (Dissanayake and Sinha, 2015). Creating domestic and regional recycling networks for locally collected and sorted textiles is critical to avoid the costs of long-distance transport for low-value materials (Zhuravleva and Aminoff, 2021; Thomas *et al.*, 2024). Total utilisation of production lines remains vital, as unit-level costs in recycling are heavily dependent on achieving full utilisation rates (Hinkka *et al.*, 2023). Moreover, effective disassembly tools contribute to a cost-efficient recycling process (e.g. Ward *et al.*, 2013; Huang *et al.*, 2021; Pal *et al.*, 2021).

Table 6. LSCCs for value creation in recycling with references

LSCCs in recycling		TBL value creation			
Pillar	LSCC	Econ	Envi	Soc	References
Operational	Developing and configuring industrial networks and recycling processes	X	X	X	Brooks (2013), Ward *et al.* (2013), Dissanayake and Sinha (2015), Sandvik and Stubbs (2019), Huang *et al.* (2021), Pal *et al.* (2021), Zhuravleva and Aminoff (2021), Kazancoglu *et al.* (2022), Xu *et al.* (2022), Dukovska-Popovska *et al.* (2023), Hinkka *et al.* (2023), Sandberg (2023), Sumo *et al.* (2023), Denizel and Schumm (2024), Thomas *et al.* (2024), Vermeyen *et al.* (2024), Kim *et al.* (2025), Wu *et al.* (2025), Ye and Lau (2025)
	Developing advanced recycling technologies and a skilled workforce	X	X	X	Dahlbo *et al.* (2017), Paras *et al.* (2019), Sandvik and Stubbs (2019), Kamble and Behera (2021), Xu *et al.* (2022), McCauley and Jestratijevic (2023), Sandberg (2023), Sumo *et al.* (2023), Al Amin and Baldacci (2024), Charnley *et al.* (2024), Elli *et al.* (2024), Thomas *et al.* (2024), Gwa *et al.* (2025), Hassan *et al.* (2025), John and Rahman (2025), Kählig *et al.* (2025), Valtere *et al.* (2025)
Strategic	Fostering ecosystem alignment and partnerships	X	X	X	Dahlbo *et al.* (2017), Sandberg *et al.* (2018), Sandvik and Stubbs (2019), Xu *et al.* (2022), Dukovska-Popovska *et al.* (2023), McCauley and Jestratijevic (2023), Sandberg (2023), Sumo *et al.* (2023), Al Amin and Baldacci (2024), Denizel and Schumm (2024), Dissanayake and Pal (2025), Kim *et al.* (2025), Ye and Lau (2025), Zaidi and Chandra (2025)
	Managing market transparency and material standardisation	X	X	X	O'Reilly and Kumar (2016), Fischer and Pascucci (2017), Sandberg *et al.* (2018), Kazancoglu *et al.* (2020), Huang *et al.* (2021), Kazancoglu *et al.* (2022), Xu *et al.* (2022), Dukovska-Popovska *et al.* (2023), Hinkka *et al.* (2023), McCauley and Jestratijevic (2023), Charnley *et al.* (2024), Denizel and Schumm (2024), Elli *et al.* (2024), Zhuravleva (2024), Burini *et al.* (2025), Gwa *et al.* (2025), Hassan *et al.* (2025), John and Rahman (2025), Kählig *et al.* (2025), Valtere *et al.* (2025)

Note(s): Econ = Economy, Envi = Environmental, Soc = Social

Regarding *economic* value, configuring established logistics resources is more cost-effective than building separate channels (Dissanayake and Sinha, 2015). Systematic process improvement allows firms – particularly smaller recyclers who purchase truckloads of unsorted items – to maintain competitiveness by reducing operating costs and increasing profit margins (Xu *et al.*, 2022; Sumo *et al.*, 2023). Regionalised networks further enhance feasibility by reducing transport costs (Thomas *et al.*, 2024; Kim *et al.*, 2025). *Environmental* value is created by localising these networks to minimise transport emissions and ensures domestic recycling remains a more sustainable solution than exporting waste abroad (Zhuravleva and Aminoff, 2021; Thomas *et al.*, 2024). *Social* value is created through regional networks that strengthen the domestic CE and create localised employment (Zhuravleva and Aminoff, 2021).

"*Developing advanced recycling technologies and a skilled workforce*" focuses on the technical and human requirements for high-quality textile-to-textile circularity. This LSCC involves implementing a "cascading approach" that prioritises recycling methods maintaining the highest fibre integrity (McCauley and Jestratijevic, 2023). Unlike sorting, where manual evaluation and automation often represent a strategic trade-off, in the heavy industrial context of recycling, advanced technology and skilled labour are mutually dependent. The human element acts as the intelligence required to manage technical tools, ensuring high-precision processes achieve the purity needed for material recovery (Paras *et al.*, 2019; Sumo *et al.*, 2023). Therefore, it includes creating opportunities for individuals to be engaged in different techniques of recycling activities – e.g. mechanical, chemical (Paras *et al.*, 2019) and accessing unique competencies in these fields through partnerships (Sandberg, 2023). It also addresses the need to improve working conditions, which in some parts of the CSC are below average due to small profit margins and a lack of regulation (Paras *et al.*, 2019). However, studies also demonstrate that implementing autonomous robotics and AI-driven pre-processing systems can provide higher operational speeds and handling accuracy compared to manual methods (Hassan *et al.*, 2025; Wu *et al.*, 2025). Collaborative R&D and investment are required to overcome technological constraints (Sandvik and Stubbs, 2019; Sumo *et al.*, 2023). For example, improving pre-processing systems for removing trims and dissolving spandex is essential for scaling up the sector (McCauley and Jestratijevic, 2023).

For *economic* value, the commercialisation of technologies and automated scaling are essential for financial viability (McCauley and Jestratijevic, 2023; Sandberg, 2023). High material quality is maintained by moving beyond downcycling in circular textile (Charnley *et al.*, 2024; Thomas *et al.*, 2024). *Environmental* value is achieved by increasing recycling rates and maintaining fibre integrity to displace the need for virgin fibres (Dahlbo *et al.*, 2017; McCauley and Jestratijevic, 2023). Advanced developments in chemical recycling, such as microwave-assisted glycolysis, now offer the potential for high-purity recovery (up to 93% pure crystals) from mixed waste without extensive pre-treatment (Valtere *et al.*, 2025). Furthermore, improved mechanical systems allow for the effective identification and removal of chemical contaminants and the recovery of mixed fibres without quality loss (Thomas *et al.*, 2024; Gwa *et al.*, 2025). *Social* value is created by providing job opportunities and improving working conditions in this industrial sector (Paras *et al.*, 2019). New paradigms like Industry 5.0 enhance this by shifting focus towards human–machine collaboration, which empowers workers and reduces physical strain in labour-intensive processes (Al Amin and Baldacci, 2024).

4.2.4.2 Strategic LSCCs for recycling. "**Fostering ecosystem alignment and partnerships**" focuses on the relational work needed to access competencies and share industrial risks. This LSCC involves strategic alliances to access resources, such as specialised facilities, that would be unachievable for a recycler operating alone (Sandberg *et al.*, 2018; Sumo *et al.*, 2023). Scaling of textile recycling systems requires high-level supply chain visibility and collaboration to ensure effective resource allocation (Al Amin and Baldacci, 2024). Furthermore, strategic partnerships build investor confidence via fashion brands providing early-stage venture capital and multi-year buying commitments for recycled fibres (Charnley *et al.*, 2024). Collaborative research and networking platforms enable diverse actors, including brands and solution providers, to collaborate on pilot projects and R&D to overcome technological constraints (Xu *et al.*, 2022; Kim *et al.*, 2025). Close coordination between brands and material recyclers is also imperative to ensure that input materials meet the stringent specifications required for fully circular garments (Denizel and Schumm, 2024).

Regarding *economic* value, this LSCC provides access to competencies and resources that would otherwise be unachievable in isolation (Pal *et al.*, 2019; Sandberg, 2023). Buying commitments and early-stage venture capital from brands are critical for building investor confidence and securing the capital needed to scale recycling innovations (Charnley *et al.*, 2024). Furthermore, sharing-economy and light-asset models allow recyclers to maximise profit while decreasing operational costs (Sumo *et al.*, 2023). *Environmental* value is realised as these alliances facilitate the expansion of circular material volumes and ensure high recovery rates (Dukovska-Popovska *et al.*, 2023; Sandberg, 2023). Supply chain visibility further fosters an integrated sustainability approach by optimising the matching of material supply to specific industrial needs (Al Amin and Baldacci, 2024; Denizel and Schumm, 2024). S*ocial* value is fostered through a collaborative and innovative industrial culture to accelerate textile circular transition (Sandberg *et al.*, 2018; Xu *et al.*, 2022). Networking platforms connect diverse actors to collaborate on pilot projects and R&D, while geographical proximity in centralised hubs facilitates knowledge spillovers that trigger localised eco-innovation (Kim *et al.*, 2025; Ye and Lau, 2025).

"Managing market transparency and material standardisation" refers to the use of data and standards to bridge the gap between supply and demand. This LSCC involves matching sorted supply with recycling demand at a granular level (Sandberg *et al.*, 2018; Dukovska-Popovska *et al.*, 2023) and utilising feedstock standardisation to establish standards and predictable pricing models (McCauley and Jestratijevic, 2023). Strategic management of the recycling loop relies increasingly on data-driven transparency. Utilising information technologies, such as QR-code, DPP and Blockchain, provides supply chain traceability to build consumer trust and facilitate B2B trading (Xu *et al.*, 2022; Burini *et al.*, 2025; Ye and Lau, 2025). Furthermore, consumer acceptance for recycled textile is a crucial factor in driving demand for recycled products, which can directly lead to a larger market segment and increased sales (O'Reilly and Kumar, 2016).

Regarding *economic* value, standardisation brings predictability to feedstock prices, while matching systems allow recyclers to effectively trade by-products (Hinkka *et al.*, 2023; McCauley and Jestratijevic, 2023), ensuring viable process economics. *Environmental* value is created as these systems are necessary to increase overall recycling rates and ensure compliance with mandated minimum recycled content in new products (Dukovska-Popovska *et al.*, 2023; Charnley *et al.*, 2024; Kählig *et al.*, 2025). Finally, *social* value is realised through consumer empowerment, as traceability allows consumers to participate confidently in the recycling loop and make informed choices (Xu *et al.*, 2022; Zhuravleva, 2024).

5. Discussion and conclusions

The findings of this SLR, consolidated in Table 7, illustrate that the transition from linear to CSCs in the textile and fashion industry is a capability-driven process that moves beyond technical feasibility towards systemic coordination. To address RQ1, this study identifies that the necessary LSCCs follow a two-pillar framework of operational and strategic dimensions across all four textile CSC activities – collection, sorting, reuse and recycling. Operational LSCCs represent the "hard" infrastructure and technical processes required to efficiently and effectively circulate textile materials. On the other hand, strategic LSCCs provide the "soft" relational intelligence and data-driven transparency necessary to bridge the informational and collaborative gaps between supply chain actors (Pal *et al.*, 2019; Sandberg, 2023; Burini *et al.*, 2025).

The necessity for these specific LSCCs is increasingly dictated by a shifting regulatory landscape, where macro-drivers such as EPR, the EU Waste Framework Directive and carbon taxation are internalising end-of-life costs (Charnley *et al.*, 2024; Arevalo-Ascanio *et al.*, 2025). These drivers transform circularity from a voluntary sustainability effort into a

Table 7. Summary of LSCCs in the four textile and fashion CSC activities

LSCC pillar	Collection	Sorting	Reuse	Recycling
Operational LSCCs	- Developing and managing integrated collection systems - Optimising collection operations for quality and efficiency	- Developing and configuring sorting networks and infrastructure - Developing and utilising skilled manual sorting - Leveraging automated sorting technologies	- Developing and managing infrastructure and reconditioning processes	- Developing and configuring industrial networks and recycling processes - Developing advanced recycling technologies and a skilled workforce
Strategic LSCCs	- Fostering stakeholder engagement and partnerships - Circular business planning and supply management	- Fostering ecosystem alignment and market standardisation	- Developing circular business models and enhancing market accessibility - Fostering responsible consumption and consumer engagement	- Fostering ecosystem alignment and partnerships - Managing market transparency and material standardisation

regulatory necessity, requiring actors in the textile and fashion industry to develop strategic LSCCs like "circular business planning and supply management" to proactively sense and respond to compliance requirements through environmental scanning (Dissanayake and Pal, 2025). The study suggests that the realisation of high-level goals, such as minimum recycled content mandates, is entirely dependent on the firm's ability to manage market transparency and ecosystem alignment to ensure a consistent standardised feedstock (Kählig *et al.*, 2025). Without these LSCCs, regulatory mandates risk becoming financial burdens rather than catalysts for value creation.

Regarding RQ2, the deployment of these LSCCs facilitates multidimensional value creation along the TBL. Economic and environmental value are often achieved as direct outcomes of supply chain efficiency and effective resource management. For instance, "Optimising collection operations for quality and efficiency" and "Leveraging automated sorting technologies" reduce per-unit costs while ensuring high-purity material streams that prevent waste and reduce the need for virgin fibres (Zhuravleva and Aminoff, 2021; Thomas *et al.*, 2024). Furthermore, the evolution towards localised "textile waste-sheds" and regionalised infrastructure within the operational pillar directly minimises transport-related emissions and costs (Thomas *et al.*, 2024; Kim *et al.*, 2025).

However, social value creation is typically a more indirect and nuanced result of these LSCCs. While operational LSCCs like "Developing advanced recycling technologies and a skilled workforce" contribute through job creation and improved human-machine collaboration in Industry 5.0 (Paras *et al.*, 2019; Al Amin and Baldacci, 2024), social value is predominantly fostered through the strategic pillar. LSCCs such as "Fostering responsible consumption and consumer engagement" and "Managing market transparency and material standardisation" empower consumers through supply chain transparency and DPP (Burini *et al.*, 2025; Ye and Lau, 2025). By providing reliable data regarding a product's history and circular potential, these LSCCs build the donor trust and societal commitment essential for long-term participation in the CE (Soares *et al.*, 2024; Zhuravleva, 2024). Ultimately, the synergy between the two pillars suggests that while the operational infrastructure provides the physical backbone for textile circularity, the strategic management of data and partnerships is what makes the CSC resilient and viable in a disrupted market (Cafforio *et al*., 2025).

5.1 Research implications

Despite attention in recent years on CE, the logistics and SCM research remains fragmented in terms of scope and definitions of circularity (Batista *et al*., 2018; Hazen *et al*., 2021). SLR, being one approach to synthesise existing knowledge (Snyder, 2019), is still rare on the intersection between SCM and CE, including CSCs (Hazen *et al*., 2021). This article addresses the crucial, yet under-researched linkage between LSCCs and multidimensional value creation within the post-consumer used textile and fashion sector.

Previous research often treats textile and fashion CSCs as a unified whole. However, as highlighted by Sandberg and Pal (2024), this risks overlooking the activity-specific LSCCs required for system-wide circular transition. Addressing this gap, this study's primary research implication is the demonstrable value of disaggregating the textile and fashion CSC for analysis. Our research purpose was to explore the relationship between LSCCs and value creation within specific CSC activities. We argue that a unified view of CSCs is insufficient, as our findings show that the required LSCCs and their value creation potentials differ across the four activities. By adopting this granular perspective, this study implies that circular logistics and SCM theory must evolve to accurately model the distinct operational and strategic requirements of collection, sorting, reuse and recycling.

Furthermore, our findings present a clear implication for how value creation is conceptualised in circular logistics and SCM research. Existing research connecting textile and fashion CSCs to value creation is limited. While value creation in the used clothing sector is multidimensional (e.g. Pal *et al*., 2019), previous research has predominantly focused on either economic (e.g. Saha *et al*., 2021; Ramírez-Escamilla *et al*., 2024) or environmental value (e.g. Riba *et al*., 2022), with comparatively limited research on social value (e.g. Suarez-Visbal *et al*., 2023). While the direct impact of LSCCs on economic and environmental value is well-supported, the indirect nature of social value creation suggests that traditional trade-off analyses are inadequate. This implies a need for more sophisticated theoretical frameworks that can capture the complex, interdependent and sometimes indirect relationships between logistics operations and holistic sustainability outcomes. The identified two-pillar framework provides a foundation for shifting from static descriptions of circular activities to more dynamic, capability-based models of CSC transformation.

5.2 Managerial implications

This study's findings offer actionable guidance for practitioners across the textile and fashion CSCs. For logistics managers involved in collection, this research highlights the need to design multi-channel collection networks and integrate forward with reverse logistics flows to improve both efficiency and material volume. In sorting, operators face a clear strategic choice: developing skilled manual sorting processes to maximise value from unique, reusable garments or investing in automated technologies to efficiently process high volumes for recycling feedstock. Likewise, for recycling, prioritising process optimisation to reduce cost, developing a skilled labour force and strategically applying a cascading recycling approach are crucial for maximising material valorisation. At a strategic level, our findings underscore the necessity of building collaborative partnerships across the supply chain to access critical competencies and share industrial risks. This has direct implications for policymakers, who should design supportive, holistic legislation – such as EPR and DPP – that fosters innovation and avoids creating barriers, e.g. collection fees, restrictive trade laws, that can fragment the value chain. Finally, practitioners must focus on strategies that raise consumer awareness and build trust through transparent information sharing, transforming consumers into active participants within the textile CSCs.

5.3 Limitations and future research

The findings and implications of this study should be considered in light of its limitations, which in turn suggest actionable directions for future research. First, while this study's analytical strength is its disaggregation of the textile and fashion CSCs into four distinct activities, this approach inherently limits a full exploration of the dynamic interdependencies between these stages. Future research should adopt a holistic systems-level perspective. Conceptual framework, e.g. system dynamics, could be used to model the cascading effects and feedback loops across the entire CSC – for instance, how improvements in sorting quality directly impact the economic viability and environmental value of downstream recycling operations.

Second, our finding that LSCCs contribute to social value in a more indirect manner reflects a limitation in the current body of literature. Future qualitative research should move beyond identifying links to explain the underlying mechanisms, such as how specific logistics decisions actively shape working conditions, or how human-machine collaboration influences job quality. Similarly, the reviewed literature often considers circular practices to be environmentally friendly at a superficial level, a limitation inherited by this study. The actual net environmental benefit of an individual logistics activity remains under-quantified. This leads to a need for multidisciplinary research employing environmental analysis tools, such as life-cycle analysis, to assess the carbon footprint and true environmental impact of specific circular activities or the whole textile and fashion CSCs.

Third, this research identifies different value types but does not analyse the inherent tensions and trade-offs between them, nor their potential negative impacts. Future research could employ frameworks like sustainable value creation to explicitly account for conflicting value outcomes and negative consequences for different stakeholders (Laukkanen and Tura, 2020; Manninen *et al*., 2023), to provide a more realistic understanding of performance in textile and fashion CSCs. Finally, as a conceptually derived framework based on SLR, the findings require extensive empirical validation. Future research employing large-scale surveys or longitudinal case studies is essential to test and refine the identified LSCCs and their TBL value creation in real-world operational settings.

Supplementary material

The supplementary material for this article can be found online.

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