Redesigning Fashion: Circular Business Model Innovation in Response to Sustainability Regulation

A Qualitative Study Exploring How Fashion Brands Can Drive Circular Business Model Innovation in Response to EU Sustainability Regulations in Sweden

BSc Thesis in Retail Management
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Abstract

As the fashion industry faces increasing environmental and regulatory pressures, the transition to circular business models (CBMs) has become urgent. This thesis investigates how Swedish fashion brands can drive circular business model innovation (CBMI) in response to sustainability regulations, with a specific focus on the European Union's Extended Producer Responsibility (EPR) schemes for textiles in Sweden. Drawing on a structured literature review and ten qualitative interviews across fashion brands, regulatory and industry bodies, and recycling organizations, the study explores how fashion brands interpret, respond to, and leverage regulation to enable CBMI. The findings contribute to the research on drivers, barriers and enabling factors in the academic field.

Findings reveal that managerial commitment and visioning are essential internal drivers, enabling firms to treat circularity as a strategic opportunity rather than merely a compliance issue. Regulation, in this case EPR, acts as a key external driver. However, the drivers' effectiveness depends on the presence of supporting systemic and structural conditions as well as firm capacity, and current business model configuration. The study further identifies collaborative partnerships, technological tools, and external support as critical mechanisms that translate intent into practice. With a conceptualization of CBMI that includes drivers, contextual factors, and mechanisms, this study contributes to the understanding of how sustainability regulation shapes circular innovation. It also highlights CBMI as a practical outcome—where eco-design, resale, and recycling can collectively support value creation and capture across the product lifecycle. The thesis offers actionable insights for fashion managers navigating sustainability transitions and responds to calls for empirical research at the intersection of regulation and circular business strategy.

Keywords: *Circular economy, circular business model innovation, Sweden, fashion, sustainability regulations, retail, EU Extended Producer Responsibility (EPR), EU Waste Framework Directive, EU strategy for sustainable and circular textiles*

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Supervisor: Christoph Baldauf

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Abbreviations

Abbreviation	Meaning
BM	Business model
BMI	Business model innovation
CBM(s)	Circular business model(s)
CBMI	Circular business model innovation
CE	Circular economy
CPR	Collective Producer Responsibility
EPR	Extended Producer Responsibility
ESPR	Eco-design for Sustainable Products Regulation
EUMS	European Union Member State
NIR	Near-Infrared
PRO	Producer Responsibility Organization
RFID	Radio-Frequency Identification
SCE	Smart circular economy
SME(s)	Small and Medium-sized Enterprises
SSCM	Sustainable supply chain management
WFD	Waste Framework Directive

1. Introduction

Fashion is one of the world's most wasteful industries, and its environmental impact has drawn growing attention across research, media, business, and policy. Marked by rapid production of low-cost, trend-driven clothing, fast fashion dominates the sector. Fast fashion is embedded in a linear "take-make-waste" system that fuels overproduction, overconsumption, and short product lifespans of low quality garments (Brydges 2021; European Commission 2022). In the European Union (EU) alone, apparel consumption is projected to increase by 63% by 2030, and each year around 5.8 million tonnes of textiles are discarded (European Commission 2022). With limited recycling infrastructure, much of this waste ends up in landfills (European Commission n.d.-a), and only 1% of used clothing is currently recycled into new garments (European Parliament 2024). In response, the EU has launched a series of circularity-focused initiatives–the one targeting waste more specifically being the Waste Framework Directive (WFD). While having been in place since 2008, presenting key principles such as the waste hierarchy and Extended Producer Responsibility (EPR) (EUR-Lex 2008), an amendment to the WFD in 2018 mandated EU Member States (EUMS) to set up separate textile waste collection by 2025 (EUR-Lex 2018; European Commission n.d.-b). In 2022, the EU Strategy for Sustainable and Circular Textiles was adopted, proposing harmonised EPR rules for textiles with eco-modulated fees (European Commission 2022; European Commission n.d.-c), while a 2023 amendment to the WFD formally introduced mandatory EPR schemes for textiles across all EUMS, with exemptions for micro-enterprises and re-use actors (European Commission 2023, p.6 & p.11; European Commission n.d.-b).

Under the 2023 amendment to the WFD, fashion brands, as producers, who put textiles on the EU market, will face four key obligations (European Commission 2023) – (1) collection systems; producers must establish or participate in systems for the collection of all waste textiles, fulfilled through authorized Producer Responsibility Organizations (PROs), (2) financing textile recycling; producers, via PROs, are responsible for financing the scaling up of textile recycling, particularly fibre-to-fibre recycling. PROs must prioritize sorting for reuse first, following the waste hierarchy, (3) reporting; on behalf of producers, PROs must calculate and publish annual data on collection performance, contribution to waste management, and placed-on-market textiles, and (4) eco-modulation of fees; producers will pay fees based on the volume of products they put on the EU market, with lower fees for

products that are more sustainable, durable, and recyclable. Through these measures, fashion brands are made responsible for their products throughout their entire lifecycle, including end-of-life management (European Commission n.d.-b), shifting the responsibility of textile waste from municipalities (Naturvårdsverket 2024).[1]

In Sweden, the fashion and textile sector contributed SEK 21 billion to public finances and employed around 44,000 people in 2022 (Svensk Handel 2024), highlighting its dual importance as both an economic actor and an environmental concern. While regulation aims at emulsifying industry and environmental objectives, municipalities report being overwhelmed by the volume of collected textiles since the 2018 amendment to the WFD was enforced on January 1st 2025 (TV4 Nyheterna 2025a; TV4 Nyheterna 2025b; Aftonbladet 2025). At the same time, Swedish retailers increasingly frame upcoming regulation as a competitive opportunity rather than a burden (Svensk Handel 2025).

Within this shifting landscape, the circular economy (CE) offers a conceptual response–one that seeks to retain the value of products and materials for as long as possible (Geissdoerfer et al. 2018; Ding et al. 2023). In this study, a circular business model (CBM) is defined as a way of creating, delivering, and capturing value that minimizes resource inputs and waste by extending, intensifying, dematerializing, and cycling product use (Geissdoerfer et al. 2018; Centobelli et al. 2020; Hellström & Olsson 2023), based on the broader notion of a business model (Geissdoerfer et al. 2022). Extending further, circular business model innovation (CBMI) is understood as *both* the outcome and the process of rethinking key business activities to embed circularity at a strategic level (Hellström & Olsson 2023). This includes redesigning supply chains (Centobelli et al. 2020), product design (Bocken & Konietzko 2022), customer engagement, and revenue streams (Hellström & Olsson 2023). CBMI refers both to the creation of business models for newly founded firms and the reconfiguration of models in incumbent firms (Hellström & Olsson 2023), aimed at maintaining or improving competitiveness (Bocken & Konietzko 2022). Despite this conceptual maturity, adoption of CBMs remains limited in practice. Existing CBMs incorporating practices such as resale, rental, and repair account for only 3.5% of the fashion market (Hellström & Olsson 2023). Meanwhile, regulations like EPR for textiles introduce both operational and strategic

[1] A timeline of the development of the WFD and related textile policy, created by the authors based on the accumulated understanding from this study, is presented in Appendix A. Also, an illustration created by the authors of the interactions between EPR stakeholders, inspired by Kunz et al.'s (2018) study, can be seen in Appendix B.

demands, reshaping how brands approach value creation and product responsibility (European Commission 2023; European Commission n.d.-c).

1.1 Purpose and Contributions

Amid mounting environmental pressures and a rapidly evolving regulatory landscape, particularly within the EU's circular economy agenda, this study explores how fashion brands respond to sustainability regulations through CBMI. Specifically, it addresses the research question: *How can fashion brands drive circular business model innovation (CBMI) in response to sustainability regulations?*

While CE, CBM, and CBMI are well-established concepts (e.g., Bocken et al. 2022; Geissdoerfer et al. 2022; Hellström & Olsson 2023), and regulatory instruments such as Extended Producer Responsibility (EPR) have been increasingly examined (e.g., Pruess 2023; Sjåfjell et al. 2020), existing research often overlooks how regulation is operationalized as a strategic lever for innovation. Centobelli et al. (2020) specifically call for more research focused on political initiatives and regulatory frameworks and their influence on the adoption of CE principles within national contexts. This study addresses this call and contributes to extending the knowledge by analyzing how fashion brands in Sweden of different types and sizes perceive and navigate EPR for textiles, offering insight into how value creation, capture, and transfer are being reimagined in response.

Through qualitative analysis of interviews with industry experts, findings show that EPR is not merely a compliance obligation but a potential driver for innovation, particularly when supported by collaborative mechanisms and scalable infrastructure. At the same time, challenges in finding feasibility and financial viability in circular models point to the prerequisite of managerial commitment to continuously innovate. These insights contribute to both theory and practice by illustrating how regulation can act as a driver for CBMI, provided firms have the strategic capacity, and support, to align environmental compliance with business value.

1.2 Delimitations

This study is limited to 10 interviews with stakeholders across the Swedish fashion and textile sector, including fashion brands, textile recyclers, as well as regulatory and industry

bodies. While their differing roles and interests may affect comparability, this diversity enriches the findings. The primary focus lies on how Swedish fashion brands perceive and respond strategically to upcoming EU sustainability regulations, particularly EPR for textiles. Although the study draws on perspectives beyond brands for context, it does not examine financial impacts, legal procedures, or conduct quantitative life cycle assessments (LCA) of textiles. Instead, it offers a focused analysis of strategic interpretations of regulatory change and CBMI.

1.3 Structural Overview

This thesis is structured into six main chapters, allowing for methodological exploration of how Swedish fashion brands can drive CBMI in response to sustainability regulations. The Introduction provides the background to the study, outlining the emergence of the CE, and the regulatory developments driving change. It also defines the purpose, research question, delimitations, and this overview of the structure. The Theoretical Framework chapter reviews relevant academic literature on four streams of literature–CBMI, sustainability regulations, industry collaboration, and technology for circularity. The Methodology chapter explains the research design, including sample selection, data collection through interviews, and analytical strategies, as well as reflections on reliability, validity, and generalizability. The Findings chapter presents the results of the empirical study, structured around key themes emerging from the interviews, while the Discussion chapter interprets these findings in light of the theoretical framework. Finally, the Conclusion chapter summarizes the key findings, discusses the study's theoretical and practical contributions, acknowledges its limitations, and suggests directions for future research.

2. Theoretical Framework

The theoretical framework for this study is grounded in a review of literature on CBMI and sustainability regulation. As technology and collaboration emerged as recurring themes during the initial analysis, additional literature on industry collaboration and circularity-enabling technologies was incorporated to provide a more nuanced understanding of the field and to strengthen the comprehensiveness of the framework.

2.1 Circular Business Model Innovation (CBMI)

The practises, drivers, barriers, and further enablers of CBMI have been the primary focus of the literature and are rather unanimously identified across studies. The ubiquitous factors of the extant literature are, however, treated under varied terms from paper to paper. Others focus on the process of CBMI, exploring the different stages, processes and strategies used by firms configuring their BMs for circularity.

In the exploration of CBMI as a process, Pieroni, McAloone & Pigosso (2019) developed three main phases of CBMI, which were later extended to four by Bocken and Konietzko (2022). An initial phase is 'sensing', which involves scanning the market to recognize the potential business opportunities in circularity (Bocken & Konietzko 2022). Hellström and Olsson (2023) recognize market-driven business model innovation (BMI) as customer centric and pinpoints customer centricity as a key driver of CBMI. Geissdoerfer et al. (2022) also discover market factors as key drivers, with changing customer demand as a prominent driver, but find that the market can also be a main barrier for CBMI, with lacking customer demand and awareness. Beyond the desirability of CBMs from a customer perspective, companies look for financial viability (Bocken & Konietzko, 2022). In Geissdoerfer et al.'s study (2022), financial factors were found to be the most relevant driver category. The untapped market potential of the CE presents opportunities for business growth, while potential operational cost efficiency makes a further case for profits to be gained (Geissdoerfer et al. 2022; Petts et al. 1999). On the flip side lies high initial investment costs and financial uncertainty as barriers (Luoma et al. 2022). Hellström and Olsson (2023) bring up how profitability has been identified as a success factor of CBMs, suggesting that financial viability is a prerequisite for the transition. Congruently, Centobelli et al. (2020) state that economic sustainability is not secondary to environmental sustainability–the circular transition cannot happen without looking into drivers of value creation, transfer, and capture. Notably, resale is taking the lead, representing the largest portion of these circular models in terms of revenue (Hellström & Olsson 2023). Although growing retailer and consumer awareness of resale models is encouraging, it is just a first step in the transition toward circular fashion retail; traditional linear models still dominate the fashion market (Hellström & Olsson 2023).

The backdrop of CBMI is the aim to reduce environmental impact and dependency on virgin resources. However, assessing the forecasted environmental value of changes in BM mechanisms has, according to research (Bocken & Konietzko 2022), not fully been figured out. Further, the ability of BM mechanisms to perform environmentally depend on the intrinsic capabilities and resources of the organization, and the extrinsic ones of the market. Moreover, spreading competences and capabilities to the whole organization necessitates managerial commitment (Centobelli et al. 2020). For incumbent firms, managing ambidexterity and dynamic capabilities on an organizational level is central as they transform their businesses (Centobelli et al. 2020). Top-level management provides a clear sense of direction, supporting the CE vision (Bocken & Konietzko 2022).

2.2 Regulatory Context

Regulation is widely recognised as fundamental in realising a CE. According to Hellström and Olsson (2023), policies and regulations put pressure on and create incentives for CBMI, while the actual transformation and scaling of CBMs also depend greatly on the regulatory context (Bocken & Konietzko, 2022). Institutional theory, which posits that organizations are shaped by external pressures rather than acting autonomously, is commonly referenced as a contextual backdrop in this strand of literature. These external pressures influence strategic decision-making by embedding social expectations, regulatory constraints, and best practices into the business environment (Agi & Nishant 2016; Arranz & Arroyabe 2023). Arranz and Arroyabe (2023) find regulatory pressures to be the most important factor for the development of CBMs. While Geissdoerfer et al. (2022) find legal drivers to be less prevailing, they discover a lack of legislative support as a predominant barrier for CBMI. Nevertheless, Wasserbaur et al. (2022) find that policy most frequently influences the value proposition, key activities, and partner networks of firms, often shaping revenue models in the process. EPR systems, in particular, offer opportunities for BM reconfiguration. In China, for instance, producers generated new revenue streams by collecting and reselling used electronics under EPR legislation (Wasserbaur et al. 2022).

The impact of regulation as a critical factor for the development and implementation of CBMs depends on firms' proactivity or reactivity, and their capacity to absorb external information (Arranz & Arroyabe 2023). Petts et al. (1999) distinguish between proactive action for the environment and reactive compliance to regulation. Confoundingly, companies taking proactive steps indicated that such environmental initiatives were not strongly

connected to compliance pressures–such actions were neither driven by regulatory requirements nor seen as a means to ensure compliance, the authors found. Other scholars concentrate more specifically on how firms respond to regulatory pressures. Regulation can serve not only as a constraint but also as a strategic lever for innovation. Wasserbaur et al. (2022) advise company decision-makers to assess their BM in relation to regulatory frameworks and to adapt the BM to exploit governmental policies to their advantage. Similarly, Yu & Liu (2024) argue that companies viewing environmental regulation as a strategic opportunity can drive long-term transformation by investing in cleaner technologies and digital innovation, outperforming competitors by leveraging regulation to improve efficiency and competitiveness. However, most companies initially respond reactively, focusing on compliance–holding especially true for SMEs, often lacking the resources to go beyond compliance. When a regulatory system is too complex, and further not seen as directly relevant or beneficial to the business or the environment, full compliance is not assured. Low awareness of legislative requirements, combined with direct and indirect compliance costs, has shown a negative impact on firms' compliance ability (Petts et al. 1999). Similar concerns are echoed by Wasserbaur et al. (2022), who argue that complex systems and broad supply chain requirements disproportionately burden SMEs. To address these constraints, simplification of compliance procedures has been suggested. Wasserbaur et al. (2022) advocate for clear supply chain requirements and simplified administration to reduce transaction costs and free up resources for the adoption of circular practices. Similarly, overlapping policy objectives can fragment organizational attention and limit the effectiveness of individual regulations (Arranz & Arroyabe 2023).

2.3 Collaboration for Circular Business Models (CBMs)

Framed within institutional theory, firms face a variety of external pressures in the transition toward a CE (Kanda et al. 2021; Agi & Nishant 2016). While these drivers demand changes in BM logic (Kanda et al. 2021), they also necessitate enhanced collaboration. Many circular strategies, such as remanufacturing, reuse, and reverse logistics, rely on an ecosystem of actors (Aarikka-Stenroos et al. 2022). Firms must engage with supply chain partners, regulators, and other stakeholders to navigate these external pressures collectively and to reconfigure BMs toward circularity (Arranz and Arroyabe 2023; Kanda et al. 2021; Hellström & Olsson 2023). For instance, reducing critical raw material use relies on sustainable supply chain management (SSCM)–managing the flows, and cooperation between

actors, across the supply chain while integrating environmental, economic, and social goals based on stakeholder demands (Ding et al. 2023). While companies often prefer to act independently to the furthest extent (Bocken & Konietzko 2022), collaborative partnerships provide access to external resources, sharing of assets, and capabilities essential for achieving environmental value (Hellström & Olsson 2023; Wasserbaur et al. 2022). As Kanda et al. (2021) argue, the traditional firm-centric BM perspective is limited in this context; circular value creation increasingly depends on ecosystems of actors that span sectors and geographies.

Regulatory frameworks, particularly EPR, introduce structural incentives for collaboration. Collective producer responsibility (CPR), specifically, exemplifies how regulation can mandate collaboration. Kunz et al. (2018) show that collective systems became essential following the shift of waste management responsibility to producers. Since CPR incentivises multiple producers to jointly manage product recovery and recycling systems, this approach leverages economies of scale and facilitates shared infrastructure, logistics, and remanufacturing processes (De et al. 2023). Rather than acting in isolation, producers may coordinate their efforts within a CPR framework to meet regulatory requirements more efficiently and reduce costs, while still supporting circular outcomes. These arrangements, however, separate producers from their own end-of-life products, which may limit incentives for eco-design (Kunz et al. 2018; De et al. 2023). Recent policy developments aim to address this by proposing differentiated fees to reward eco-design (Kunz et al. 2018).

Despite its importance, collaboration presents challenges that many firms are unwilling or unable to address. Companies often choose CBMs that allow them to retain strategic and financial control rather than those that require broad collaboration across value creation and capture (Aarikka-Stenroos et al. 2022). Additionally, while some collaborative initiatives exist, such as shared take-back systems, there remains a notable lack of partnerships that share revenue or coordinate value capture mechanisms (Aarikka-Stenroos et al. 2022).

2.4 Technologies for Circular Business Models (CBMs)

While technology is frequently cited as a driver of CBMI, the literature emphasizes its role in enabling key circular practices rather than directly initiating transformation. Geissdoerfer et al. (2022) identify emerging technological opportunities as a driver of CBMI, while Hellström and Olsson (2023) suggest that digital technologies support the implementation of

circular models but do not themselves drive the innovation process. The literature review by Centobelli et al. (2020) offers a useful synthesis of these perspectives. They argue that emerging technologies, when strategically applied, can accelerate CE goals and contribute to sustainable competitiveness and smart growth. As Centobelli et al. (2020) state, this enabling force can support top management's belief in the transition, and willingness to push for it, making technology appear as a driving force of CBMI. What is more, the interaction between regulation and technology is increasingly acknowledged in the CE literature. Wasserbaur et al. (2022) note that nearly half of their reviewed studies examine how regulation influences firms' use of digital technologies. Regulation has been particularly influential in sectors like textiles, where policies aligned with EU waste directives have fostered a greater emphasis on reuse and recycling technologies (Riba et al. 2020; Luoma et al. 2022). Yu and Liu (2024) argue that appropriate environmental regulations can act as technological innovation triggers, while governmental initiatives, such as the European Green Deal, are actively encouraging firms to implement resource-efficient technologies that support waste prevention, recycling, and reuse (Truant et al. 2023).

Digital technologies are recognised as essential to achieving the systemic coordination required for CE transitions. They facilitate value chain-wide collaboration through data integration, real-time communication, and shared platforms (Truant et al. 2023; Luoma et al. 2022). In the textile industry, digital infrastructures support joint decision-making, product tracking, and lifecycle data sharing, all of which are vital for reverse logistics, design innovation, SSCM, and closed-loop production systems (Ding et al. 2023; Luoma et al. 2022). Specifically, The Internet of Things (IoT) has emerged as a core enabler of CBMs by facilitating real-time monitoring, product tracking, and resource optimization. IoT systems integrate diverse technologies–RFID, GPS, and infrared sensors–into connected infrastructures that enhance transparency across the product lifecycle. IoT applications extend from product design to end-of-life waste management, enabling cyber-physical systems to reduce emissions, improve inventory control, and optimize material flows (Ding et al. 2023). These capabilities support key circular practices such as redesign, reuse, remanufacturing, and recycling (Truant et al. 2023; Luoma et al. 2022).

The topic of technological innovations in textile recycling is central to the development of circular systems. Chemical, mechanical, and thermal recycling methods are currently employed depending on fiber type, yet recycling rates for post-consumer textile waste remain

low due to collection inefficiencies and high sorting costs (Riba et al. 2020). Infrared spectroscopy, which classifies fibers based on molecular properties without requiring pre-treatment, offers a promising solution. Riba et al. (2020) demonstrate that when paired with multivariate analysis, this technology achieves high-speed, high-accuracy classification, offering a scalable path toward automated textile sorting and more efficient recycling processes. Additional barriers to higher recycling rates include a lack of high-quality recycled materials, underdeveloped circular business models, and difficulties in fostering collaborative innovation (Luoma et al. 2022).

While smart circular economy (SCE) promises the utilization of technology for circularity, it implies strategic challenges. SCE refers to the integration of circular principles with digital technologies such as AI, blockchain, and cyber-physical systems (Truant et al. 2023). While SCE offers notable advantages in resilience, resource efficiency, and cost optimization, its implementation faces substantial financial, infrastructural, and informational barriers. High initial investment costs and uncertain short- to medium-term returns often deter firms, particularly SMEs (Luoma et al. 2022; Truant et al. 2023). Furthermore, the lack of organizational readiness and difficulty in assessing the environmental value of digital solutions remain persistent challenges (Luoma et al. 2022). Top management commitment and strategic vision are therefore critical in overcoming these hurdles and unlocking the potential of SCE as well as supporting the transition to emerging technologies (Luoma et al. 2022; Centobelli et al. 2020).

2.5 Summary of Theoretical Framework

This study builds on an interdisciplinary body of literature on CBMI and sustainability regulation, with added insights from research on collaboration and enabling technologies. We take with us an understanding of CBMI where organizational change is influenced by internal and external factors. Taking a process oriented view, sensing the market and the regulatory context is key for CBMI. However, whether these external pressures act as drivers and/or barriers to the CE transition is ambiguous. Regulation is treated not only as a compliance mechanism but also as a potential strategic driver, depending on firms' capacity to act proactively and absorb external expectations. While the importance of internal resources, capabilities, and managerial commitment and visioning is acknowledged, these factors receive comparatively less attention than external pressures. Moreover, collaboration is widely recognized as essential for achieving the ecosystem-level integration that CBMs

require, offering access to shared resources and scalability–particularly under CPR frameworks–yet remains underutilized in practice. Finally, digital and recycling technologies act as enablers, supporting scalability and improving the feasibility of circular BM mechanisms. This framework informs our investigation of how Swedish fashion brands respond to the regulatory shift posed by EPR for textiles and what conditions shape their ability to innovate circularly in practice. Concurrently, it serves as an analytical reference for assessing how interviewee perspectives align with, challenge, or extend existing research on CBMI.

3. Methodology

3.1 Research Design

A qualitative strategy was selected to enable a deep and flexible exploration of participants' perspectives (Bell, Bryman & Harley 2019, pp.60, 356). In addition, the research explores a relatively underexplored area, which warrants the use of qualitative methods to capture elaborative and nuanced responses. In contrast, a quantitative approach, with its emphasis on objectivity and standardized measurement, was considered less appropriate for capturing the complexity and richness of individual viewpoints (Bell, Bryman & Harley 2019, p.377).

The research process followed Kvale and Brinkmann's (2014) 'seven stages of an interview study,' providing a systematic structure for thematizing, designing, interviewing, transcribing, analyzing, verifying, and reporting (p.144). Semi-structured interviews were selected as the primary method of data collection to allow for both consistency and flexibility (Bell, Bryman & Harley 2019, p.369). An interview guide served as the foundation for the discussions, while still leaving room for the emergence of new topics (Kvale & Brinkmann 2014, p.172; Bell, Bryman & Harley 2019, p.448). All interviews were transcribed and subsequently analyzed thematically (Kvale & Brinkmann 2014, p.45).

3.2 Sample Selection

This study focuses on Swedish fashion brands subject to the forthcoming EU EPR regulation for textiles. While the primary emphasis is on the brand perspective, the sampling also included stakeholders from the recycling sector, as well as regulatory and industry bodies to provide diverse perspectives on how fashion brands can drive CBMI in response to

sustainability regulations. Consequently, respondents were not required to represent a fashion brand directly; instead, they were selected based on their organizational affiliation or professional experience relevant to the study's themes.

A purposive sampling strategy was employed, selecting participants based on predefined criteria relevant to addressing the study's research question (Bell, Bryman & Harley 2019, p.391). As the study progressed, this was complemented by snowball sampling to include experts in circularity-enabling technologies, based on their emerging relevance to the research focus (Bell, Bryman & Harley 2019, p.395). Initial criteria focused on managers from large and small-to-medium (SME) Swedish fashion brands to ensure variation in organizational size and CBMI progression, as well as stakeholders in regulatory and industry bodies. Participants were identified via LinkedIn, Google searches, and personal networks, and selected based on their managerial and/or sustainability-related roles and experiences. A total of 44 prospects were contacted via phone, email, or LinkedIn. While not all individuals held current roles within organizations, the outreach spanned 26 organizations in total–including eight large and eight small to medium-sized Swedish fashion brands. All contact attempts and correspondences were systematically documented and followed up, and interviews were scheduled based on participants' availability and willingness to participate.

3.3 Interviews

A total of ten interviews were conducted, covering eleven participants, over a period of three weeks. Following Bell, Bryman and Harley (2019, p.377), the aim was to study participants in their natural setting, allowing them to express their views freely, unconstrained by language or setting. Participants could choose to conduct the interview in Swedish or English, and to meet online or in person (for those based in Stockholm). Six interviews were held online–with web cameras in order to capture visual cues (Bell, Bryman & Harley 2019, p.452)–while four were conducted in person at locations chosen by the participants. Most interviews were held in Swedish, with one conducted in English. A summary of the interviews is presented in Table 1. To protect participant anonymity, certain details were deliberately omitted. As organizational size was primarily relevant to the fashion brand representatives, this information is excluded for other stakeholder groups. Furthermore, all interviewees currently hold or have previously held a managerial and/or sustainability-related position.

Based on the theoretical framework and the aim to explore unknown yet relevant aspects of the topic, an interview guide was developed with a structured sequence of key themes designed to address the research question (Bell, Bryman & Harley 2019, pp.436, 440). These included how CBMI is understood, perceptions of the EU's EPR for textiles, the role of industry collaboration in supporting CBMI, and technological solutions enabling circular transformation and regulatory compliance. The guide was initially written in English (see Appendix C), since this is the language the research is conducted in, and thereafter translated into Swedish (see Appendix D) for the interviews conducted in Swedish.

Before each interview, the guide was reviewed by the authors to highlight questions in the guide deemed most relevant to the participant's organizational perspective. During the interviews, the authors balanced structure with flexibility–adapting the phrasing of questions, following up on emerging insights, clarifying meaning, and interpreting responses in real time (Bell, Bryman & Harley 2019, pp.441–442). At the start of each interview, participants were asked for a basic "factsheet" (Bell, Bryman & Harley 2019, p.440), including their role and professional experience. To support comparative analysis, the study's definitions of a CBM and CBMI, as presented in the Introduction chapter of this report, were also introduced at the start of each interview to establish a common ground. A brief description of the EPR for textiles was also provided, following an initial assessment of the participant's general understanding of it.

Ethical considerations were carefully observed throughout the research process. Participants received a written consent form (Appendix E) explaining the study's purpose, their rights, and how their data would be managed in compliance with GDPR. Formal consent for participation and for recording the interviews was obtained before starting each session (Kvale & Brinkmann 2014, pp.107–109). Additionally, participants who requested to review their statements and representations in the final report were contacted before submission to confirm their approval.

To ensure that the interviewee's responses were captured in their own words (Bell, Bryman & Harley 2019, p.440) and to document how answers were conveyed (Bell, Bryman & Harley, 2019 p.445), all interviews were recorded, except for one where the participant(s) declined. Recordings were made using a pre-tested smartphone application and, in some cases, the transcription function in Microsoft Teams to mitigate potential data loss. Manual notes were also taken during the interviews. After each session, recordings were uploaded to a

GDPR-compliant, locally run speech-to-text software program for automatic transcription (Bell, Bryman & Harley 2019, p.449). The resulting files were securely stored in OneDrive, following data management guidelines. All recordings and transcriptions were deleted from other devices after upload.

Interviewee	Organizational Perspective	Size of Organization	Date	Language	Setting	Duration
Interviewee A	Regulatory/Industry body	-	2025-03-12	Swedish	Online (Microsoft Teams)	1:05:35
Interviewee B	Fashion brand	Small	2025-03-13	Swedish	Physical meeting	00:54:08
Interviewee C	Fashion brand	*Not applicable*	2025-03-17	Swedish	Online (Microsoft Teams)	00:56:08
Interviewee D	Fashion brand	Large	2025-03-19	Swedish	Online (Microsoft Teams)	00:30:20
Interviewee E	Fashion brand	Small	2025-03-19	Swedish	Physical meeting	00:51:22
Interviewee F	Fashion brand	Large	2025-03-24	Swedish	Online (Microsoft Teams)	00:43:32
Interviewee G	Fashion brand	Large	2025-03-26	Swedish	Online (Microsoft Teams)	00:26:46
Interviewee H	Regulatory/Industry body	-	2025-03-26	English	Online (Microsoft Teams)	0:50:06
Interviewee I*						
Interviewee J*	Fashion brand	Large	2025-03-26	Swedish	Physical meeting	00:55:01
Interviewee K	Recycling	-	2025-03-31	Swedish	Online (Microsoft Teams)	00:39:41
* Interviewee I and J participated in the same interview, representing one organizational perspective.					μ =	0:47:16

Table 1. *Summary of Interviewees including organizational perspective, size of organization,[2] interview date, language, setting, and duration.*

3.4 Data Analysis

This study applied reflexive thematic analysis to identify patterns of meaning in the interview data, following the six-phase process described by Byrne (2022) and guided by Braun and Clarke's approach (see Table 2). Coding was conducted in Excel using a matrix format. This structure allowed the researchers to visually organize and quantify recurring patterns, incorporating a limited quantitative element into the qualitative analysis (Bell, Bryman & Harley 2019, pp.531). Six top-level codes were developed in advance of the analysis, reflecting the main analytical areas of the research and aligned with the interview guide and theoretical foundation (see Appendix F).

[2] Organizational size was classified according to the EU's definition, where a small organization has 10 to 49 employees, medium has 50 to 249, and large more than 250 employees (European Union, n.d.).

Phase	Description
Phase 1: Familiarization	The researchers listened to the audio recordings while reviewing the transcripts to ensure accuracy and gain an overall sense of the material (Byrne 2022).
Phase 2: Coding	Initial codes were generated by reviewing each transcript individually, identifying recurring patterns, contrasts, and conceptually relevant material (Bell, Bryman & Harley 2019, p. 519). Codes were grouped under the relevant top-level categories, with corresponding quotes from the interviews. As the process evolved, similar or overlapping codes were merged, removed, or redefined based on both emergent meaning and alignment with existing literature (Bell, Bryman & Harley 2019, pp. 531, 533).
Phase 3: Generating themes	Codes were examined for shared underlying meanings and clustered into preliminary themes and sub-themes (Byrne 2022). Themes were not simply derived from frequency but constructed through interpretive analysis of relationships between codes and their relevance to the research question (Byrne 2022; Bell, Bryman & Harley 2019, p. 533).
Phase 4: Reviewing themes	Potential themes were reviewed to evaluate their coherence and analytic value, particularly their ability to reflect the dataset and answer the research question (Byrne 2022).
Phase 5: Defining & naming themes	Themes were refined, and illustrative extracts for this report were selected to support each one. This stage clarified the scope and focus of each theme in preparation for writing (Byrne 2022).
Phase 6: Writing up	Themes were organized into a logical structure for presentation in the Findings section (Section 4), ensuring analytic clarity and narrative coherence (Byrne 2022).

Table 2. *The six-phase process of the study's thematic data analysis.*

3.5 Reliability & Validity

Bell, Bryman, and Harley (2019) argue that the criteria used to assess qualitative research should align with its underlying philosophical assumptions, rather than adopting standards designed for quantitative methods (p.366). Guided by this view, this study applies the concepts of *trustworthiness* as quality criteria. Trustworthiness comprises four elements: credibility, transferability, dependability, and confirmability (Bell, Bryman & Harley 2019, p.363).

To strengthen credibility, the authors sought internal validity by continuously discussing and reviewing interviews, ensuring alignment between participant responses and the conceptual framework (Bell, Bryman & Harley 2019, p.363). This was supported by re-listening to recordings, cross-checking transcripts and correcting spoken to written language (Kvale & Brinkmann 2014, p.227), and conducting follow-ups with several participants for respondent validation, allowing for clarification and minor revisions where necessary. While transferability, corresponding to external validity, is inherently limited due to the small sample, the study provides sufficient contextual detail to support relevance to similar settings,

prioritizing depth over breadth. Broader generalization would require a larger sample (Bell, Bryman & Harley 2019, pp.363-365).

Dependability, paralleling reliability, was strengthened through careful documentation of all stages of the research process. This approach follows the principle that transparent and traceable research practices enhance the credibility and justification of findings (Bell, Bryman & Harley 2019, pp.363-3655). Further, confirmability, which parallels objectivity, was supported by grounding all interpretations in the data and actively working to minimize researcher bias. Although the translation of quotations from Swedish to English required interpretative judgment, this process was shaped by the authors' contextual understanding and experience–a form of collaborative sense-making (Bell, Bryman & Harley 2019, p.450).

4. Findings

Below, the found themes from the conducted interviews are presented, with a structure reflecting the theoretical framework. First, the barriers found to CBMI are presented, including systemic and industry-level constraints, financial barriers, and organizational gaps. The drivers to CBMI follows, including market driven incentives, commitment and vision, and sustainability regulations. This is followed by the enablers of CBMI, consisting of collaborative enablers, technological enablers, and external support. Moreover, the found strategic approaches to CBMI are presented, which includes product-centric strategies, operational governance for circularity, and defining circularity. Lastly, fashion brand implications of EPR is presented, comprising regulatory compliance demands, and perceived regulatory frictions.

4.1 Barriers to CBMI

4.1.1 Systemic and Industry-Level Constraints

Several participants emphasized that the foundational structures needed to enable a CE and CBMI are not yet in place. This includes the absence of infrastructure, fragmentation within the industry, inadequate policy and incentive structures, and a lack of sufficient circular solutions. Interviewee D (large fashion brand) explained: "*The major obstacles are that the societal infrastructure is not in place today. We lack the supporting components. If we look at producer responsibility, for example, we do not have adequate collection, sorting, and*

recycling infrastructure. Nor do we have a regulatory framework that promotes circular business models." Interviewee F (large fashion brand) expressed that current structures fail to reward sustainable practices: "*Authorities should encourage it. You should somehow get paid for doing it–it should pay off. But the structures make it a bit challenging.*"

Beyond insufficient infrastructure and incentives, fragmentation within the fashion industry presents a barrier to coordinated circular transitions. Differences in company size, maturity, supply chain scope, agendas, and managerial priorities make it difficult to align on shared environmental objectives. Interviewee I (large fashion brand) noted: "*There are different groups and alliances, but in my experience, it is quite difficult for voluntarily assembled groups, in a relatively weak industry, to reach consensus and push a common agenda.*"

Moreover, the majority of respondents highlighted a widespread lack of adequate solutions to support circularity in practice. Core areas of concern included material quality in garment waste management, and most prominently, recycling. The prevalence of low-quality garments in the market manifests in challenges down the waste hierarchy. As Interviewee C (fashion brand) explained: "*To sort based on what it contains–that's not so difficult anymore. There's technology that can read what it contains. But by the time it gets there, it's already too late in a way if it's some crap that can't be used.*" Interviewee B (small fashion brand) mentioned that*"in some cases, it's simply a lack of good commercial materials."* Further, the lack of sufficient recycling technologies was made clear. The inherent limitations of recycled cotton fibers were mentioned by various respondents. Interviewee F described: "*The fiber becomes shorter and shorter [...] so you'll need to mix in virgin materials for the fabric to hold. Otherwise, the product ends up with a very short lifespan, and in that case you work against the whole idea of circularity*." The shortcomings of recycled PET were also brought up: *"Many have marketed recycled PET as a great solution, which it's not, it's not recyclable.*" (Interviewee B) Interviewee A (regulatory/industry body) added: *"[...] the production facilities that are actually needed to do high-quality recycled fibers is a key issue today–it's difficult to make.*" Even where solutions exist, respondents noted major limitations in automation and scalability. Interviewee F explained: "*There are loads of technologies today, like machines that can detect what materials a garment contains [...] it's too little automatization. [...] Even though things are happening, it's not happening nearly fast enough*." Interviewee K (recycling) echoed: "*The technology exists, but not at scale.*"

Unsupportive market dynamics were another key barrier to CBMI widely cited by participants. The insights suggest that consumer behavior, especially unsustainable consumption patterns and price sensitivity, shape brand incentives and the viability of more sustainable offerings. Several respondents pointed to the high turnover of clothing consumption and the prevailing "take-make-waste" mindset as major obstacles. Interviewee F (large fashion brand) noted: *"The frequency with which people wear out and throw away their clothes is far from sustainable."* Interviewee H (regulatory/industry body) echoed this concern in relation to BM transformation: *"From what is happening now, especially with so-called ultra-fast fashion, consumers still want to buy new clothes often. They may not be willing to change their behavior, which can prevent companies from changing to a more sustainable business model–one where they would need to produce less or better-quality clothing, rather than incentivizing frequent purchases."* According to multiple respondents, consumers are primarily driven by price and often prioritize affordability over sustainability. Interviewee K (recycling) emphasized the issue of willingness to pay: "*I believe consumers are the real barrier. We must be willing to pay for it, even if it's more expensive."* Interviewee A (regulatory/industry body) explained the additional challenge of getting recycled materials to live up to quality expectations at an attractive price point: *"In the short term, it's about offering competitive prices with high quality. Quality that's at least as good as that of virgin materials. That alone is a barrier today–it limits and constrains the consumer experience and perception."* They continued: *"The problem here is that it often results in a higher price. So it's not attractive enough."*

4.1.2 Financial Barriers

Implementing CBMs often demands additional processes and cost structures that are difficult to justify within current business realities. As Interviewee E (small fashion brand) stated: *"Very few are willing to pay for the process it takes. That's the challenge–everything environmentally friendly requires extra processes."* These added requirements translate directly into higher operational costs. Interviewee A (regulatory/industry body) said: *"One of the problems is that you need to run profitable operations at the same time. And then we're back to the issue of the cost of establishing and running business models."* These barriers are further compounded by the dominance of linear business models. Interviewee D (large fashion brand) mentioned: "*The linear business model still costs less than the circular one*," while Interviewee C (fashion brand) described: "*And then for fast fashion I don't know how*

you do it–it becomes a completely different business model to make garments that last. You'd need different materials and quality. [...] the raw materials would cost more [...] it becomes a different price. It's a different customer." Interviewee G (large fashion brand) discussed profitability and scalability concerns within circular practices, specifically resale models: "*[...] circular business models, I'd say scalability and profitability are the biggest barriers. For our 'pre-loved' concept [...] it works well in selected stores. But we'd maybe like to take it online to reach more customers [...]. But then scaling becomes a bit difficult. What do you do when every pair of jeans is unique? Because every manual handling becomes expensive."* Rental services faced similar hurdles. *"We've also offered in-store rental for several years but haven't found profitability in it*", said Interviewee G, and continued: "*Unfortunately, customer uptake is low. Cleaning the products is expensive, and so are the transport costs. That makes it challenging. [...] Scaling is always a problem, especially for rental*." Further, repair services were described as financially unsustainable. Interviewee B (small fashion brand) remarked: *"Taking back a garment and fixing it often costs more than selling a new one. You can't exploit a global value chain in the same way. If the original price is low, it's hard to make the numbers work."*

Several interviewees noted that the perceived weak business case is exacerbated by short-term financial expectations. As Interviewee F (large fashion brand) observed: *"The initial, large investment and the return on investment–it takes time before you get that back. I think that's a big challenge."* From a technological and infrastructure perspective, Interviewee I (large fashion brand) underlined the scale of investment needed for circularity to function: "*Investments in the millions or billions need to be made and aligned with demand, both before and after the recycling happens.*" Reinforcing the need for financial risk-taking, Interviewee B (small fashion brand) concluded: *"You have to be willing to absorb some of the cost."* Some interviewees stressed the importance of adopting a longer-term, more sustainable growth mindset. Interviewee E (small fashion brand) reflected: *"Everyone always wants to grow, but it's not sustainable to constantly aim for growth in a company."* Interviewee C (fashion brand) similarly pointed to underlying shareholder expectations as major structural barriers: "*Ownership structures, shareholder dividends, and sales growth–it's always about setting goals to increase profits [...]. At fast fashion companies, it's extremely challenging",* adding: *"It's about having owners who think differently. Otherwise, we'll just keep going in the same direction."*

4.1.3 Organizational Gaps

A recurring barrier identified by respondents relates to limitations in internal capabilities, particularly expertise, technical competence, and the ability to adapt organizational processes to support CBMI. Interviewee K (recycling) emphasized.*"It must be a lack of knowledge."* Similarly, Interviewee C (fashion brand) noted: *"The smaller players [...] don't really have the in-house expertise."* Beyond knowledge, respondents emphasized the need for dynamic capabilities–the ability to adapt business processes and routines. Interviewee G (large fashion brand) described the internal shift: *"It's a huge effort for us internally. [...]. I mean, It'll be tough for a few years as we transition, and it will take more time, and there will be new ways of thinking."* Interviewee E (small fashion brand) discussed how the current BM hindered the integration of circular capabilities: *"It requires resources and a different kind of business model–different kinds of expertise and work tasks than what we currently have."* Interviewee I (large fashion brand) reinforced the organizational constraints of such initiatives: *"There's a lot that needs to be implemented–getting stakeholders on board, educating people, and so on."* When it comes to circularity-enabling technology, smaller companies face additional constraints. Interviewee I noted, *"It's a barrier for smaller companies that can't adapt as quickly."*. Similarly, Interviewee B (small fashion brand) highlighted operational gaps in implementation: *"The barriers, [...] it's about having someone responsible and knowledgeable of a system. Someone to take ownership of implementation, maintenance, training–and then there's the cost of the system."*

In addition to capabilities, lack of time and financial resources emerged as significant barriers, especially for SMEs. Interviewee H (regulatory/industry body) simply stated, *"Barriers [...] maybe [a] lack of resources, because this needs a lot of investment."* Interviewee I (large fashion brand) said: *"If it's a small enterprise that has a turnover of maybe 50MSEK that is to do the same thing [as a large enterprise with billions in turnover] a difficult situation is created."* Interviewee E (small fashion brand) acknowledged: *"All of this–circularity–it will require more time and resources from us. And costs."* Interviewee B (small fashion brand) summed it up: *"The barrier is resources. Bandwidth."*

4.2 Drivers of CBMI

4.2.1 Market Driven Incentives

Several respondents highlighted growing stakeholder pressure and shifting consumer expectations as signals of emerging market opportunities for CBMI. Interviewee G (large fashion brand) stated: *"The whole world is talking about circularity, and that question is gaining traction. So it's of course not just us internally wanting to push this forward."* Interviewee B (small fashion brand) observed *"a growing set of expectations from customers–that you should work circularly."* Further noting that although their repair service is a cost, free of charge for their customers, they continue to offer it due to its value for customer satisfaction and loyalty: *"We see the customer benefit, that it can build loyalty. Repairs make people significantly more satisfied because they know there's safety in it. In the long run, it's seen as a valuable extra service when you buy a garment from [brand]."* Similarly, in addition to being a popular offering, Interviewee F (large fashion brand) described how their resale platform addresses consumer pain points around clothing disposal.

4.2.2 Commitment & Vision

A recurring theme among the respondents was the role of personal and organizational commitment to sustainability as a primary driver for CBMI. Several interviewees described a sense of moral responsibility and long-term vision as the foundation for their circular initiatives. Interviewee F (large fashion brand) emphasized the urgency of systemic change, stating: *"The driving force is that we want a sustainable industry. Everyone working in textiles knows we can't continue as if there's no tomorrow. I mean, just extracting resources indefinitely."* For others, circularity was not only a strategic response, but a core part of the brand's identity. Interviewee E (small fashion brand) explained: *"We wanted to create something that was the complete opposite of fast fashion. [...] It's part of our philosophy, which we defined from the beginning."* They continued: *"It's driven by passion, until regulation mandates."* In a similar vein, Interviewee G (large fashion brand) noted: *"I would say that the driving force for circular business models [...] for [brand] comes from within rather than from the outside."* Managerial mindset was also identified as critical for fostering change. Interviewee C (fashion brand) stressed: *"You need leadership with the right mindset about this–visionary, not old school. That's essential."*

4.2.3 Sustainability Regulations

While several interviewees emphasized personal commitment as a more immediate motivator, there was a broad recognition that regulation plays a critical role in shaping brands' actions. Some respondents viewed regulation primarily through a compliance lens. Interviewee F (large fashion brand) remarked: *"EPR is really just a compliance issue, and there of course, we always want to make sure we comply with current legislations."* This compliance-oriented perspective was especially common among companies already working with circularity or among smaller players lacking in-house expertise. Interviewee C (fashion brand) explained: *"There probably are a number of companies acting more reactively–the smaller players, because they don't really have in-house know-how and so on."* In this context, regulation drives innovation by making it an unavoidable requirement. Interviewee E (small fashion brand) affirmed: *"It would of course be if it becomes a must."* Others envisioned a greater role of regulation. Interviewee A (regulatory/industry body) noted: *"Of course, clearer legislation can help improve efficiency and ensure that these business models become more attractive and circular."* Interviewee H (regulatory/industry body) echoed this, emphasizing the importance of binding rules: "*It's either national or European legislation that drives the main change."* One respondent even welcomed the possibility of further requirements: *"Hopefully, more requirements will come that we have to adapt to. And with that, maybe we'll be forced to develop certain areas."* (Interviewee B, small fashion brand)

Moreover, most interviewees expressed a positive attitude toward the upcoming EPR regulation and its potential impact.*"We know and understand and think it's positive that circularity among textile products should increase. [...] Every textile material is a resource, so it's really important that we take care of it."* (Interviewee G, large fashion brand) This optimism is rooted in an understanding of the urgency to manage textile waste more strategically: *"I think companies need to act with this EPR, and I hope EPR also becomes a tool to push for that–to have a clearer strategy for what to do with the waste."* (Interviewee C, fashion brand) Interviewee A (regulatory/industry body) noted that the regulation could foster new systems for reuse: *"There will be various system solutions for increased reuse and, not least, a greater interest in taking back one's own products."* Beyond sustainability goals, some also identified clear business potential with EPR. Interviewee K (recycling) said: *"What's so good now is that there was actually an EU directive requiring the separate collection of textiles from other household waste. That's when we managed to [...] get a*

material stream in place. And once there's a material [...] it becomes easier for this innovator who has an idea about recycling materials in some way", while pointing out the emerging economic opportunities for PROs: *"I know how much money will be involved."* They added: *"As soon as someone sees that there's money to be made, there will be many venture capitalists ready to invest."* Similarly, Interviewee A described: "*As a PRO, [...], you can sell it on an open, free market to actors who have hopefully developed technologies and innovations to make new fibers and materials–materials that could later be bought by, for example, H&M.*"

4.3 Enablers of CBMI

4.3.1 Collaborative Enablers

Collaboration was consistently identified across the interviews as a key enabler of CBMI. Respondents described a strong industry-wide spirit of cooperation, with brands sharing knowledge, navigating regulatory uncertainty together, and co-investing in new solutions. One participant from a trade association even described collaboration as *"the core"* of advancing circularity (Interviewee A, regulatory/industry body). Many respondents emphasized, as Interviewee D (large fashion brand) put it: "*We need each other, we have to work across our industry and beyond our industry in order to innovate."* Interviewee F (large fashion brand) highlighted: "*We need more of us to invest in innovations,*" and described collaborations with academics and other brands as especially productive. "*I think what probably works best is when brands organize themselves [...] working together to achieve improvements*", they added. Similarly, Interviewee C (fashion brand) noted that CBMI is "*not a competitive issue; it's something that's required",* making collaboration both possible and necessary. In addition, Interviewee G (large fashion brand) highlighted how collaboration supports mutual learning under regulatory uncertainty: *"We all fall under a legal requirement–and we don't really know how it will affect us. [...] So we often ask each other: 'What are you thinking? Have you heard the latest?'"*

Respondents also pointed to collaboration as crucial for scaling circular systems. Interviewee H (regulatory/industry body) suggested that EPR systems could facilitate collective infrastructure: "*Having an EPR system in place might support sort of hubs for reuse, preparation for reuse, and recycling.*" Interviewee B (small fashion brand) also observed the emergence of more accessible, scalable solutions: *"There are more and more solutions now*

starting to appear that are easier to plug into. And some might achieve a bit more economies of scale, and make it profitable to work with these things." Moreover, collaboration enables resource sharing–whether financial, technical, or knowledge-based. Interviewee D (large fashion brand) described: *"We wouldn't start recycling viscose ourselves. That's someone else's job [...] But they need us to bring the solution to market, and we need them to reduce our impact [on the environment]."* Similarly, interviewee E (small fashion brand) mentioned: *"I don't think it's strange that someone creates the first life and then someone [else] takes care of the second [and] third life."* Interviewee A (regulatory/industry body) reflected this: *"There are business models today that build on handling, collection and sorting and sales of reuse-textiles [...]. They play an important role in society."*

4.3.2 Technological Enablers

Across the interviews, technology was consistently identified as critical for enabling CBMs through increased efficiency, scalability, and traceability. Respondents viewed technology as a tool for improving resource and cost efficiency. As Interviewee D (large fashion brand) explained: *"Technology and innovation have a really big role to play in resource effective production methods."* Interviewee B (small fashion brand) similarly noted that a driver for implementing technology is *"efficiency [...] cost-efficiency [...] resource-efficiency"*.

A specific use case of technology is within textile sorting. Several interviewees discussed technological advances in textile sorting, such as NIR and RFID. Interviewee F (large fashion brand) referenced advanced sorting facilities in Sweden: "*They can sense different materials and sort it in different ways – such techniques are irreplaceable I believe, in order for this to scale."* RFID was described as *"a very practical way"* by Interviewee I (large fashion brand) to track and automate sorting of garments. Technology is also considered indispensable for textile recycling. Interviewee F (large fashion brand), emphasized the importance of developing new technologies for non-reusable garments. Although recycled polyester from PET bottles has been mainstream for over a decade, textile-to-textile polyester solutions, like those by Syre, are seen as key moving forward: *"Polyester has exceptional durability and the ability to retain its properties over time. It's however a synthetic and has oil-based origin, raising environmental concerns [...]. To mitigate the negative parts, transitioning to textile-to-textile recycled polyester, is an important step."* (Interviewee F) Interviewee K (recycling) stated: *"Without the technology we can never recycle it [textiles]."*

Technology is also facilitating resale through platforms and automation. Interviewee E (small fashion brand) noted the development of e-commerce tools for second-hand sales, while Interviewee D (large fashion brand) highlighted opportunities of scaling resale: *"I'm sure there is something with AI in this that one could explore. Surely when it comes to photos and automation."* The same goes for rental. Interviewee I&J (large fashion brand) noted *"tech that makes it easier for increased usage, for example rental models"* as potential advancements. Most respondents agreed that innovating technology is essential for enabling circularity. Interviewee K said: *"Today there are technological tools very much at the R&D level"*. Interviewee C (fashion brand) expressed: *"There has to be many other players out there working with technical innovation for this [emerging technologies enabling CBMI]. We just have to find them."*

Digital Product Passports (DPPs), RFID, QR-codes and blockchain were particularly of interest for traceability, enabling circular practices. Interviewee B (small fashion brand) stated: *"The biggest game changer [for enabling CBMs] I would say would be that all garments have a unique ID."* Interviewee G (large fashion brand) noted: *"We've had RFID on our price tags for a few years. It gives a clear traceability of products."* They added: *"What we have used for our rental-collections are QR-codes to be able to see 'this product has been reserved in this size'[...]."* Interviewee A (regulatory/industry body) mentioned that DPPs can enhance efficiency: "*DPPs will play an important role both as carriers of information about the actual material, but also to enhance efficiency in the whole value chain,"* adding that DPPs can among other things help brands identify their own products in future take-back systems. Others challenged this notion. Interviewee K (recycling) argued that the DPP is more likely to serve as a tool for calculating the eco-modulation fee than for sorting: *"If you understand the scale of the sorting system, it becomes clear that the product passport cannot, or I find it hard to believe that it should, be used for producers to get their own material back."* They continued: *"The product passport should indicate how much the producer has to pay in producer fees. In the way that you have to show with the product passport what the item contains."*

4.3.3 External Support

Access to resources was described as a prerequisite for engaging in circular initiatives. Larger companies were seen as having a clear advantage due to dedicated teams and funding. As Interviewee C (fashion brand) remarked: *"H&M [...] is a company with a lot of resources.*

They have people who sit and work full-time with it [circular solutions].” Institutional support, from trade associations, national authorities, and the EU, was also considered important. Trade associations were mentioned as sources of guidance on how to navigate EPR, with Interviewee D (large fashion brand) stating: *"Those who we have a very frequent dialogue with about this are Svensk Handel and Teko.*” EU-level support was likewise seen as critical for implementation and innovation, holding a central role in harmonising national legislation. One respondent mentioned how the EU will provide further guidance for PROs and producers on how to fulfill the obligations, especially on reporting. However, as Interviewee H (regulatory/industry body) underscored: *“The compliance is to be ensured by member states. So the support should be provided mainly by member states.”* Several interviewees referred to EU funding programs like Horizon Europe and collaborative platforms such as Ecocystex and the eTextile European Platform, which bring together actors to promote innovation in the textile sector. Interviewees also pointed to national funding bodies like Vinnova and Klimatklivet as helpful enablers. *“It actually exists. For example Vinnova [...] The government has a lot of faith in that,*” said Interviewee K (recycling), stressing that public support is essential until circular solutions become profitable enough to attract private investment.

4.4 Strategic Approaches to CBMI

4.4.1 Product-Centric Strategies

Among the circular strategies discussed by interviewees, resale was consistently described as the most successful. Interviewee C (fashion brand) witnessed second-hand becoming a core part of the brand’s identity: “*At [brand] the absolute most popular was second-hand. It became something we integrated into the actual brand–’this is important for us, that we can produce products with such high quality that they last for long.”*” Several interviewees confirmed resale’s appeal. Interviewee B (small fashion brand) described their take-back program, which along with their second-hand store, is seen as a growing part of their circular business: *“We still want to grow it.”* Similarly, Interviewee F (large fashion brand) stressed the importance of scale: *“It’s important that we have a big platform for this, where we can help circulate garments many times in order for it to be more sustainable.”* Except for popularity among customers, resale was also described as the most profitable circular strategy. Interviewee F described thinking of their take-back program as an inflow of resources: *“We also saw this [collected textiles] as resources rather than waste."* Interviewee

G (large fashion brand) added: *"The second hand we have a profitability in. [...] The sales and margins are good."* While some resale initiatives are brand-specific, not all stakeholders believe resale systems can remain brand-exclusive. Interviewee F stated: *"When we do take-back programs in our stores you can hand in any brands you want, because this you do for the industry."* Interviewee A (regulatory/industry body) noted: *"It will be very difficult to see it as closed [take-back] systems. [...]. Hard time seeing that would happen.*" Yet, the same respondent also acknowledged resale's advantages when brands manage their own products: *"Second-hand garments that are re-sold by the brand that once sold them from the start [...] have a greater credibility",* resonating with some of the fashion brands-respondents' preferences to solely get back their own products.

Several interviewees emphasized the importance of extending product life as a key principle in circular fashion: "*There are many different actors working to prolong the life of products placed on the market. There is a clear drive to keep them in use for as long as possible before they go to recycling*", noted Interviewee A (regulatory/industry body). Interviewee B (small fashion brand) underscored *"the importance of producing high-quality garments",* in conflict with the low-quality standard in the market. It is clear that this work starts with the design process, as Interviewee D (large fashion brand) stated: *"A circular customer journey is really about buying fewer garments. And that's possible because we design our clothes for longer lifespans–from a quality perspective, durability, and timeless design. We don't follow short trends but instead aim for a longer life cycle from the design stage."* Circular design processes appear as beneficial not only to the environment, but also to profit. Interviewee D said: *"We've also seen success through our design principles [...]. It's one reason we've been able to charge more for our garments, produce fewer items, and still earn more."* One aspect of circular product design is the choice of material: "*What raw materials are being used from the start?*" (Interviewee C, fashion brand) Material choice also involves prioritizing recycled inputs–many brands use recycled materials in their collections. Interviewee B (small fashion brand) shared that *"almost 40–50 % of our wool is recycled wool."* Interviewee G (large fashion brand) explained that their products include polyester from recycled PET bottles, *"fibers that have already been used once, before textile recycling".* Interviewee B emphasized the dual focus of recycled and recyclable inputs: *"This ties into the design aspect too–not only using recycled materials, but also making sure they can be recycled again. And not moving materials from one functioning recycling system to another that doesn't work."* To that end, the use of natural and mono-materials plays a crucial role. *"We mostly use natural*

materials; [...] mono-materials, which is quite important when thinking about general recycling solutions. It's much easier to recycle 100% cotton or 100% wool than strange blends and synthetic materials." (Interviewee B) Concrete adjustments in product design can also facilitate recycling. Interviewee B shared an example: *"We recently made changes to our jeans, removing elements like rivets–those little metal bits–and replacing them with bartacks. That way, you don't have to cut away half the jeans to recycle them."*

4.4.2 Operational Governance for Circularity

SSCM and lean production were described as strategic approaches to CBMI. Interviewee D (large fashion brand) emphasized this broader definition: *"The third aspect of circularity is circular supply chains [...] a supply chain that can take care of textile waste and recycle it to new material."* Several respondents linked circularity to minimized waste. Interviewee G (large fashion brand) highlighted efficiency in production: *"We have a pretty low base price, which means that we can not afford material spill. [...] any spill [...] they reuse the fibers or use it in different kinds of processes."* Use of existing fabric stocks was also seen as a way to minimize waste. Interviewee C (fashion brand) said: *"You can work with your production chain and say [...] 'we will use old textiles from old batches to make products.'"* Similarly, Interviewee E (small fashion brand) said: *"We have worked with [...] regenerated cashmere [...] where you take the spill from a production."* Further, production planning and demand forecasting were cited as key practices. Interviewee C emphasized: *"Companies need to have that planning in their sourcing. [...] forecast the volumes to be put on the market."* Interviewee B (small fashion brand) described how their no-season model avoids overstock and waste.

Moreover, several interviewees emphasized the importance of control mechanisms, such as KPIs, targets, clear definitions, and internal accountability, to steer CBMI. Interviewee I&J (large fashion brand) named *"footprint per use"* as a *"key-KPI"* guiding their efforts. Interviewee C (fashion brand) stressed the need to anchor circularity in measurable goals: *"You set goals. [...] Then you get to build it into the material choices together with sourcing, design and quality."* They also underlined the need for clarity in definitions before setting targets: *"To define what you mean by 'circular products'. It's very important to know that when you are to set the targets."* Several actors adopt their own definitions of circularity. As one interviewee described: *"We embrace circularity from three perspectives: circular products, a circular customer journey, and a circular supply chain."* (Interviewee D, large

fashion brand) These dimensions are integrated into business practices to different extents, with varying intent and impact. Interviewee I (large fashion brand) distinguished between *"optical circularity"* and *"real circularity",* cautioning against well-intended but superficial efforts, emphasising the need to move from *"things that feel good to things that do good."* Ideally, responsibility for defining and targeting circularity should sit at leadership level, integrated across functions: *"So that it permeates the entire organization, by setting goals on KPIs that all operating teams have to report on."* (Interviewee D) Interviewee G shared plans to strengthen internal governance: *"We need to assign a team internally that focuses on this and circular business models."*

4.5 Fashion Brand Implications of EPR

4.5.1 Regulatory Compliance Demands

In the interviews, it is mentioned that much concerning EPR's implementation in Sweden is still unclear. For fashion brands, the implementation of EPR will likely mean a legally authorized collective approach to textile collection, through PROs. Interviewee B (small fashion brand) described the discrepancies between PROs and brand-individual collections: "*Even if we have a take-back program, it doesn't count as us taking care of our garments. Because we don't get all our garments back. So that requires collaboration among everyone*." At the same time, "*it could also be that legislation says you must offer to take back textiles in your own store. If you sell textiles, you must also take them back.*" (Interviewee A, regulatory/industry body) To understand how PROs may function in practice, one can look to EPR schemes in other sectors. To be recognized as a PRO in the electronics sector, an application must be submitted to the Swedish Environmental Protection Agency and specific criteria must be met: "*A group of industry organizations together created the PRO. [...]. Certain criteria must be fulfilled, such as having nationwide coverage, so that you can collect fees and either finance or carry out the work yourself.*" (Interviewee A) Although PROs have historically been created jointly by trade associations, the textile sector in Sweden might take a different approach: "*When it comes to textiles, there are many different possibilities. It's not a given that it will be trade associations that come together to form a PRO, and that the producers who place textiles on the market pay to it. It doesn't have to be that way. But historically, because these are such large systems, that's how it has ended up. Still, as a private actor, you could say, 'We want to take on a role. We believe we can collect material from all over Sweden,' and then you appl*y." (Interviewee A) A few fashion brands are

considering assuming the PRO role themselves: "*[We are looking at] having our own sorting facility based on raw material fractions, together with the industry or not, where we use RFID and fairly simple sorting solutions to sort the materials, and then handle and sell our fractions to actors interested in managing the raw materials in a circular process.*" (Interviewees I&J, large fashion brand)

Another aspect of EPR is eco-modulation. The eco-modulation takes multiple attributes and factors into account: "*In the legislation [...], they have proposed not only eco-modulation based on distinct, concrete sustainability attributes related to the product itself–that is, to the textile. That's the traditional approach [...] where eco-modulation assumes that one type of fibre is more environmentally harmful than another, and therefore the costs should differ. [...] What's now being proposed also includes something called extrinsic durability*." (Interviewee A, regulatory/industry body) Interviewee A continued: "*That refers more to structural sustainability. [...] Concretely, it means that a fee can also be based on how many products a company places on the European market–and, by extension, how much waste they generate. The background to this is that the aim is to target companies like Temu and Shein and other platforms that place a very large volume of textiles on the market.*" Understanding the principles of eco-modulation gives fashion brands the opportunity to reduce their fees through design and strategic choices. As Interviewee H (regulatory/industry body) noted: "*Really, companies should look at ways to minimize as much as possible their waste, because the more waste they generate, or the less sustainable their products are, the more they have to pay in terms of financial contribution to the EPR scheme.*"

The need for proactive design strategies is further reinforced by the upcoming related Eco-design for Sustainable Products Regulation (ESPR). As Interviewee A remarked: "*One must also keep in mind that the ESPR legislation and the delegated act for textiles are coming. And that will impose high requirements on eco-design.*" These requirements imply the need to design garments that are suitable for circular practices, including ease of reuse and recyclability. However, realising eco-design in practice is complex. Interviewee F (large fashion brand) elaborated: *"I'm still iterating on how we should do this in the best way, but already at the design stage–when choosing certain materials and how they are combined with others–there should perhaps be a kind of point system so that the designer can understand: When have I done it right?"* Reflecting a desire for industry-led implementation, Interviewee D (large fashion brand) expressed that producers want influence over how eco-design links to

eco-modulated fees: *"We want to set the conditions for when you get lower fees–if you design garments for recycling."*

4.5.2 Perceived Regulatory Frictions

Fashion brands perceive the upcoming EU regulation as unclear and still tentative. Further, compliance is seen as complex, requiring deep knowledge, strategy, and internal implementation. Interviewee C (fashion brand) said: "*Building a deep understanding of what this actually entails, and then finding a strategy for how we implement it and ensure internal compliance–that's the next step. It's really difficult.*" There are also concerns about the complexity of EPR reporting and the administrative burden it may create: "*What I would like to tell the EU is that it would be good if they created a unified EU solution for this, so we wouldn't have to deal with it in 20 different countries. It's going to get administratively messy. Everyone does it a bit differently.*" (Interviewee B, small fashion brand) The upcoming "omnibus package" was mentioned by Interviewees I&J (large fashion brand) and C (fashion brand) as a sign that the growing burden of reporting is beginning to be recognised. Lobbying was also brought up as a means for contributing to more viable regulation: "*There's a lot in this that means we have to devote significant time to public affairs–we have to go out and lobby politicians to change and adjust the legislation so that this chain can actually function. Because it's a utopia to think we'll be able to manage it all within the EU.*" (Interviewee F, large fashion brand) Interviewees I and J (large fashion brand) stressed the importance of "*remembering what the purpose of the regulation was,*" warning that heavy regulatory burdens risk crowding out smaller actors, who are often the source of the innovation and creativity essential to both fashion and circular CBMI. A similar concern was raised by Interviewee F, who highlighted how compliance efforts can conflict with creative processes: *"We've had challenges–if you try to tackle everything at once [...], we constantly end up in conflict with the creative team."*

However, contrary to the perception of regulation as a burden, several respondents, like Interviewee K (recycling), described it as a catalyst for opportunity: *"On the contrary. It's a huge opportunity for everyone. A regulation is coming that will complicate things a bit, but that always means more money will be involved–one way or another."*

5. Discussion

This chapter discusses how the findings of the study relate to the research question and theoretical framework. It begins by examining the key drivers of CBMI, followed by its contextual factors and mechanisms, and CBMI as an outcome. The chapter concludes with managerial implications, highlighting how fashion brands can apply these insights in practice. Throughout, the discussion reflects on the study's contributions to understanding how fashion brands can strategically respond to sustainability regulations through CBMI.

5.1 Drivers to Circular Business Model Innovation (CBMI)

5.1.1 Managerial Commitment and Visioning

In line with the literature, our findings underscore managerial commitment as a key driver of CBMI. This commitment is not only foundational for initiating change but also crucial for navigating the systemic nature of CBMs, which require strategic direction and internal capacity building. As previous research suggests, a clear CE vision and the ability to distribute capabilities across the organization are central to enabling such transitions (Bocken & Konietzko 2022; Centobelli et al. 2020). The findings further nuance this view by highlighting the role of intrinsic motivation. For many respondents, CBMI was driven by a personal sense of responsibility and a long-term commitment to sustainability. In this context, managerial commitment extends beyond strategic alignment; it becomes a moral and visionary force that sustains circular efforts despite external uncertainty.

In addition to ethical motivation, commitment and visioning is also shaped by market-sensing. As discussed in the literature, CBMI often begins with a 'sensing' phase, in which firms identify emerging opportunities in shifting customer demand or anticipate future BMs (Bocken & Konietzko 2022). While this study did not find business opportunities to be dominant drivers, some brands had strategically embedded sustainability into their core offering, suggesting that proactive visioning can position circularity as a competitive advantage.

Finally, both the literature and our findings suggest that managerial commitment influences how firms respond to regulation. The literature distinguishes between proactive and reactive organizational strategies (Arranz & Arroyabe 2023; Petts et al. 1999), showing in accordance with our findings that most companies initially respond reactively to regulation. Interestingly,

consistent with Petts et al. (1999), our findings suggest that environmentally proactive firms are not primarily driven by regulation, nor necessarily assured regulatory compliance. Our data shows that leadership committed to sustainability often leads to actions that go beyond compliance, but that do not strategically leverage regulation.

5.1.2 Sustainability Regulation

Even when regulation is approached purely as a matter of compliance, both the literature and our findings show that it functions as a key driver of CBMI. Previous research highlights the structural pressure and incentives regulation can create, underscoring its fundamental role in enabling circular transitions (Arranz & Arroyabe, 2023; Hellström & Olsson, 2024; Bocken & Konietzko, 2022). Our study supports this view–several respondents indicated that clear legislation could increase the attractiveness and efficiency of CBMI, and emphasized the importance of binding rules in enabling change. At the same time, respondents in our study noted that current structures fail to sufficiently reward sustainable practices, leaving firms with limited institutional backing for circular efforts. This suggests that while regulation can act as a driver, its absence or weak design limits its impact on CBMI.

Given the perceived lack of sufficient regulatory support for CBMI, the forthcoming EPR schemes for textiles may play a pivotal role in filling that gap. As earlier literature suggests, EU regulation has historically had a marked influence on the textile sector by accelerating the adoption of reuse and recycling technologies (Riba et al. 2020; Luoma et al. 2022). Our findings reflect the potential of EPR to act as a legislative mechanism that could provide the structural clarity and pressure previously seen as missing. A majority of interviewees expressed a positive outlook toward the upcoming regulation, viewing it not only as necessary, but as an opportunity to treat textile waste more strategically. These perspectives closely align with existing research, which identifies EPR frameworks as enablers of coordination, infrastructure development, and shared investment across firms (De et al. 2023).

An interviewee from the recycling sector emphasized the business opportunities that could emerge through this development. They argued that regulatory shifts such as EPR can catalyse entirely new industrial activity around material recovery and resale. While this perspective was not brought up by fashion brands in our study, the potential is reinforced by prior research. In China, for instance, EPR schemes for electronics enabled producers to

generate new revenue streams and restructure their BMs to capture value from used products (Wasserbaur et al. 2022).

5.2 Contextual Factors to Circular Business Model Innovation (CBMI)

While prior research often categorises various factors as either drivers, barriers or enablers to CBMI, our findings suggest that several commonly discussed influences on CBMI are better understood as contextual factors that shape circular transformation. By analyzing such factors as contextual we acknowledge the conditional nature of their influence and bring greater nuance to the understanding of how firms navigate the transition toward circularity.

5.2.1 Systemic and Structural Conditions

Many of the potential contributions of regulation, such as EPR, discussed earlier operate by improving systemic and structural conditions necessary for circular transformation. The emphasis placed on these external conditions in the literature is seconded by our findings, which indicate that current logistical and infrastructural limitations significantly restrain the implementation of CBMI. The concept of a "circular system" was frequently described as necessary but underdeveloped, with missing prerequisites such as supporting infrastructure, coherent logistics, viable technological solutions and industry harmonization. These shortcomings inhibit the operationalisation of circular strategies, particularly when it comes to managing post-consumer products. Both the literature (e.g., Aarikka-Stenroos et al. 2022; Kanda et al. 2021) and our data reinforce the understanding that CBMs cannot be advanced in isolation, but in ecosystems. The systemic nature of CBMI requires the involvement of diverse stakeholders, however, industry fragmentation was seen in our interviews as a barrier to collective progress. Meanwhile, literature as well as our findings suggests that EPR can facilitate collective systems for circular practices (De et al. 2023). In our study, brands expressed optimism about being able to "plug into" such systems as they emerge.

Technology can, under the right conditions, support the structures required for CBMI. In our study, several respondents pointed to the barrier of underdeveloped technological solutions for circularity. Emerging technologies, while promising, require significant investment, infrastructure, and integration to support widespread CBMI implementation (Truant et al. 2024). Importantly, both the literature and our findings recognise that regulatory mechanisms can help overcome these hurdles by incentivising technological advancement (Yu and Liu

2024). Our findings suggest that DPPs, which may become mandatory under upcoming EU regulation, could serve as a lever for traceability, eco-modulation, and system integration. While views differ on their exact utility, their role in standardizing product data could strengthen the digital backbone supporting CBMI. Taken together, our findings suggest that the right systemic and structural conditions become a factor that enforces organizational intent and regulatory pressure driving CBMI if present, or impedes it if absent.

5.2.2 Current Business Model

CBMI is controlled internally by its financial viability, and a company's current BM, including its circular readiness. While the environmental rationale for CBMs is clear, both prior research and our findings show that profitability remains a precondition for implementation. As previous studies highlight, CBMI must support or evolve into sustainable value creation and capture mechanisms to be viable (Centobelli et al. 2020; Bocken & Konietzko, 2022). Across our interviews, firms repeatedly emphasized that current linear models often fail to accommodate the cost structures, processes, and infrastructure required for circularity. Firms already engaged in circular practices are better positioned to respond strategically to sustainability regulations, making BM circular maturity level a controlling condition for the transformation. Many noted that additional processes, whether for sorting, repair, resale, or recycling, add operational costs that are difficult to absorb without a clear business case–in some cases exaggerated by short-term financial expectations, both internally and from shareholders. Most fashion firms operate on high-volume linear models, which are structurally misaligned with the durability and slower turnover circularity requires (Hellström & Olsson, 2023). This disconnect is even more pronounced for fast fashion actors, where profit models are built on speed and scale rather than longevity. Still, several interviewees expressed that even when sustainability is central to the brand identity, reconciling circularity with profitability under existing models remains a challenge, particularly when customer willingness to pay is limited (Geissdoerfer et al. 2022) or when circular processes demand high manual handling and logistics investments. On the flip side, our observations reflect the literature's findings on the commercial traction of resale.

5.2.3 Resources and Capabilities

Both the literature and our findings indicate that CBMI is shaped by a firm's internal capabilities, size, and available resources. These factors steer the ability to pursue circular

strategies and respond to regulatory demands. Dynamic capabilities are especially important in supporting CBMI (Centobelli et al. 2020). Our findings reflect this–several firms cited a lack of in-house expertise and difficulty aligning new processes with existing routines as barriers to implementation. These capability limitations are not limited to small firms, but are often more acute among them. Resources function as a parallel constraint, as the transition to circularity requires upfront investment in systems, infrastructure, and training (Luoma et al. 2022; Truant et al. 2023). For many of our interviewees, particularly those representing SMEs, capacity was the most immediate limitation. Respondents described being unable to allocate resources to circularity without compromising core operations. This scarcity also affects the adoption of circular technologies and limits the feasibility of pursuing CBMI beyond compliance (Luoma et al. 2022). At the same time, our data shows that firms with greater resources and capabilities are better positioned to engage proactively. They are more likely to experiment with CBMI, comply with emerging regulation, and invest in long-term transformation.

5.3 Mechanisms of Circular Business Model Innovation (CBMI)

While drivers initiate the pursuit of CBMI and contextual factors condition a firm's ability to respond, mechanisms of CBMI help explain *how* this transition unfolds in practice. Mechanisms shape the pathways through which regulatory pressure, managerial intent, or other enabling forces are translated into CBMI.

5.3.1 Operational collaboration

According to the literature, collaborative partnerships grant access to external resources, infrastructure, and technical capabilities that may otherwise be unattainable (Hellström & Olsson, 2023). This was echoed in our findings, as several interviewees described partnerships as essential for accessing capabilities in areas where developing solutions in-house was seen as either unfeasible or inefficient, as well as for sharing best practices (Agi & Nishant 2016; Arranz & Arroyabe 2023). The collaborative dynamic of joining forces is particularly visible under EPR regulation, implicating reverse logistics and supply chain management.

5.3.2 Technological Tools

Prior research has increasingly examined the interplay between CBMI and technology, and together with our findings, underscores its multifaceted role in enabling, scaling, and supporting circular innovation. At the same time, both highlight a persistent gap between the technological promise and the practical maturity of circular solutions. For example, in line with previous research (Truant et al. 2023; Luoma et al. 2022; Ding et al. 2023), RFID and QR-codes were starting to be used for product-level tracking, and several participants noted the utility of advanced textile sorting techniques. Yet, these tools remain insufficiently scaled, and many respondents pointed to a general lack of robust, commercially viable solutions. This lack of maturity is consistent with the literature, which emphasises technical barriers to the adoption of smart circular economy (SCE) tools (Truant et al. 2023).

5.3.3 External Support

As circularity and regulation become more complex, external support emerges as a vital mechanism for enabling CBMI, particularly in navigating regulatory demands and finding financial viability in circularity. Our findings show that public institutions, industry associations, and EU-level bodies play important roles in supporting fashion brands' circular transitions.

In line with Geissdoerfer et al. (2022), who found a lack of legislative support as a predominant barrier for CBMI, informational support is especially relevant as firms prepare for EPR. While larger firms may have dedicated compliance departments, smaller players are more dependent on accessible external knowledge systems to make sense of new rules and opportunities. At the EU level, the role of harmonisation and legislative clarity was underscored by respondents. The EU's work in aligning national implementations was viewed as essential for reducing fragmentation and supporting cross-border compliance. Funding support was also identified as a necessary enabler, particularly for smaller actors who face greater challenges in financing circular transitions. Public grants and programs, and national instruments were seen as critical until CBMs become commercially viable. Respondents noted that such financial support helps firms overcome early-stage risks and develop solutions that might otherwise be inaccessible.

5.4 Circular Business Model Innovation (CBMI) as an Outcome

Aligning with the definition used in this study, CBMI is conceptualized as both a process and an outcome (Hellström & Olsson, 2023). While the discussion up until this point has addressed CBMI as a process, this section focuses on its manifestation as an outcome–where business activities have been redesigned to create, capture, and transfer value in line with circular principles (Centobelli et al. 2020). A central finding is the ambiguity surrounding the definition of "circularity." While the literature provides multiple interpretations, the interviews reveal that brands often develop internal definitions to make the concept actionable. Further, these definitions should inform how value is created, captured, and transferred in a CBM.

As one of the foundational blocks for circularity, eco-design emerged as a key lever for value creation and capture, laying the foundation for the feasibility for remaining circular practices. Both the interviews and literature (Bocken & Konietzko 2022; Kunz et al. 2018) revealed that strategically designing garments for durability, quality, and recyclability enables brands to enhance customer value, higher profit margins, lower eco-modulation fees under EPR, and comply with the forthcoming ESPR. Both the interviews and literature (Ding et al. 2023) suggest that this requires alignment with (sustainable) supply chain management and production planning. Moreover, no fashion brands pointed to a weakened incentive to design for recyclability due to CPR frameworks (Kunz et al. 2018). Instead, a diluted strategic focus due to overlapping regulatory demands (Arranz and Arroyabe 2023)–the ESPR and EPR–could be deciphered in the interviews. Yet, in the case of textiles, this overlap may be synergistic: eco-design could function as a foundational enabler for fulfilling EPR obligations, especially when it comes to the eco-modulated fees.

Take-back programs emerged as a clear example of how fashion brands can simultaneously create, deliver and capture value, offering convenience to customers while turning end-of-use garments into resources. Yet, interviewees differed on whether such programs should be individual or collective. While brand-specific systems help retain control and brand integrity (Aarikka-Stenroos et al. 2022), collective producer responsibility (CPR) was framed as a more scalable, cost-efficient, and environmentally friendly model, especially under EPR regulation (De et al. 2023; Kanda et al. 2021).

Moreover, resale stood out as the most successful and profitable circular strategy according to nearly all respondents. This supports the notion that environmental and economic goals can align (Centobelli et al. 2020). However, scaling resale, particularly online, was described as challenging due to labor-intensive sorting processes. Technologies such as infrared spectroscopy (Riba et al. 2020) and RFID (Luoma et al. 2022; Truant et al. 2023), while not widely adopted yet, were highlighted in both literature and interviews as feasible tools in practice, with potential to enable scalable, automated sorting and inventory optimization for resale.

When resale was not feasible, typically due to low product quality or garment condition, recycling was discussed as a strategy. Yet, both the literature and the interviews agree that recycling is currently underdeveloped. While some literature emphasizes collection and sorting costs (Riba et al. 2020), interviewees pointed more strongly to the occurrence of low-quality textiles in the market and poor fibre quality post-recycling as challenges for recycling, in line with Luoma et al. (2022). While technologies again can be seen as enablers, there is no solution yet to the problem of widespread poor material choices, which hinders the viability of recycling from the outset.

6. Conclusion

6.1 Summary

This thesis set out to explore how fashion brands can drive circular business model innovation (CBMI) in response to sustainability regulations, with a particular focus on the anticipated implementation of Extended Producer Responsibility (EPR) for textiles in Sweden. Through a combination of literature synthesis and qualitative interviews with industry stakeholders, the study examined relevant factors affecting CBMI within the current regulatory landscape, in order to answer the research question. The findings affirm that managerial commitment and visioning are foundational to initiating CBMI, particularly in light of the systemic and long-term orientation required. Regulation, while often approached reactively by fashion brands, emerges as a significant external driver. Our analysis of contextual factors and mechanisms of CBMI allow for nuanced analysis of the area. Specifically, CBMI is moderated by internal resources and capabilities, the firm's current business model as well as systemic and structural conditions, underscoring that a firm's ability to innovate is deeply embedded in its organizational context. Furthermore, the study

identifies operational collaboration, technological tools, and external support as critical mechanisms that translate circular intent into actionable outcomes. Importantly, while technological tools and operational collaboration are primarily understood as mechanisms–translating strategic intent or regulatory pressure into actionable circular practices–they may also play a moderating role, acting as enabling systems and structures.

As an outcome, CBMI can be conceptualized as a circular model. Eco-design serves as a foundation–companies that strategically design garments for durability and recyclability are more likely to view products as resources throughout the entire lifecycle. This mindset fosters the implementation of take-back systems and lean production practices. When such design decisions align with advances in recycling technology, high-quality materials can be reintegrated into new production cycles. In turn, these garments ensure viability in circular strategies such as resale, repair, and, ultimately, fibre-to-fibre recycling. Importantly, greater durability justifies higher garment prices, which not only support increased profit margins but also discourage frequent consumer purchases—ultimately contributing to extended and intensified product use in line with the EU waste hierarchy. If paired with collaborative industry structures and harmonized regulatory frameworks, this circular model holds the potential to reshape both production systems and consumer behaviour, gradually phasing out low-quality, non-recyclable garments and advancing circularity at scale.

6.2 Theoretical Contributions

In terms of research contributions, our study both confirms and extends existing literature on circular economy (CE), business model innovation (BMI), and sustainability regulations. Firstly, the thesis contributes to bridging existing literature on circular business model innovation (CBMI) and regulatory impact. Meanwhile, we validate many of the relationships previously identified in existing research, for instance that collaboration within the ecosystem is crucial in enabling circular business models (CBMs). Moreover, we do so through a new and highly relevant empirical case—the implementation of EPR schemes for textiles in Sweden. Beyond confirmation, we also add nuance to the roles of various influencing factors to CBMI. Rather than simply categorizing these variables as barriers, drivers, or enablers, we nuance the perception of them by extending the categories to include contextual factors and mechanisms—highlighting how they shape the translation of sustainability regulation into CBMI. While the distinction between drivers, contextual factors, and mechanisms is made to support the purpose of this thesis, it is not fixed. Future research may adopt alternative

classifications depending on its aim–for instance, studies focusing on managerial commitment could frame regulation as a contextual factor shaping that commitment rather than as a direct driver of CBMI.

6.3 Managerial Implications

For managers in the fashion industry, navigating the circular transition demands both strategic foresight and operational adaptability. CBMI unfolds through a series of deliberate managerial actions, each shaped by the firm's resources, capabilities, and broader ecosystem conditions. It depends on managerial commitment and visioning using systemic thinking, long-term orientation, and the ability to reimagine existing value creation mechanisms. While larger companies may be able to pilot circular initiatives with limited risk exposure, smaller firms–often more constrained in capacity–must approach CBMI as a strategic risk. In such contexts, commitment must be paired with entrepreneurial risk-taking, particularly when resource limitations reduce the margin for error.

1. **Understand the regulation.** A critical first step for managers is to build a solid understanding of the regulatory context. This involves identifying both obligations and opportunities, and assessing how regulation may intersect with the firm's existing BM. Regulation is not just a compliance issue–it can be a catalyst for innovation, especially if managers proactively align their strategies with forthcoming legal frameworks.
2. **Define circularity.** Managers must define what circularity means for their firm. This includes clarifying the scope and ambition of circularity initiatives, and assessing how these definitions align with the firm's core BM. In addition, associated targets and control mechanisms for achieving these should be clearly defined.
3. **Identify opportunities.** Managers should identify where circular principles can be applied. That is, opportunities to strengthen or reconfigure value propositions, transfer mechanisms, and revenue models in ways that support circularity while exploiting associated regulations. Building a circular business case, grounded in both environmental and commercial rationale, is essential. In doing so they should take an ecosystem wide perspective and not limit their visioning to the individual firm.
4. **Find enablers.** Once a strategic direction and actionable areas have been established, managers should turn to enablers of circular implementation. This study identifies two key types: cross-industry collaboration and technological tools. In finding enablers,

managers can also assess external support options, such as trade associations, public funding, and EU platforms, especially important for SMEs with limited internal capacity.

5. **Experiment, monitor and evaluate.** Lastly, the shift to circularity should be viewed as an iterative learning process. Managers must be willing to experiment, monitor, and adapt, using feedback loops to refine solutions and build organizational capability over time. This demands an entrepreneurial mindset, one that embraces renewal, tolerates risk, and values progress even in uncertain conditions.

Taken together, these steps constitute the CBMI process as outlined in this thesis: an innovation journey shaped by vision and regulation, conditioned by contextual factors, operationalized through mechanisms, and structured around continuous learning. As regulatory, environmental, and market pressures increase, CBMI is emerging as the hygiene factor of tomorrow's fashion industry. For those who act strategically and decisively, it may also secure competitive advantage as sustainability becomes a core market expectation.

6.4 Limitations & Future Research

This study is based on ten interviews with stakeholders in the Swedish fashion and textile sector, providing context-rich insights but limiting the generalizability of the findings. Future research could extend this work to other geographical and regulatory settings to explore differences and similarities in how CBMI unfolds under varying conditions (Centobelli et al. 2020). The sample also primarily includes individuals in managerial roles, particularly within fashion brands. To deepen understanding of implementation challenges, future studies could revisit the operational-level staff perspective included in Petts et al's (1999) study, offering practical perspectives on the feasibility of CBMI.

The analysis focuses primarily on strategic interpretations of regulation and innovation, rather than detailed operational, legal, environmental, or financial aspects. Further research could examine how profitability through high-margin models might replace traditional turnover-based growth models, and whether such a shift could reduce the market share of low-quality, non-recyclable garments. More granularly, while firms are recommended to find their own definitions and measures for circularity, appropriate assessments of environmental impact of circular efforts should be further researched (Bocken & Konietzko 2022, Truant et al. 2024). Finally, managerial commitment emerged as a crucial driver of CBMI.

Understanding how such commitment is fostered, sustained, and scaled within organizations warrants further investigation, particularly in firms that have not yet begun their circular transition.

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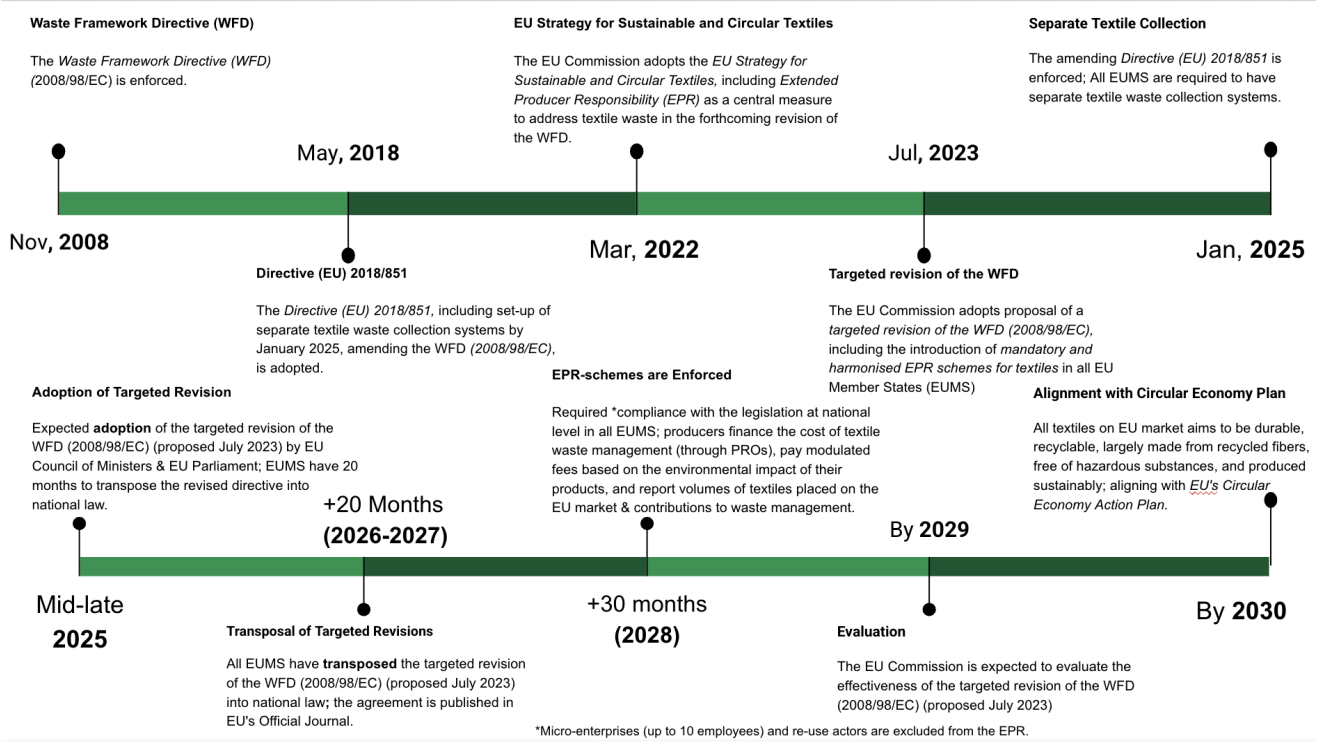
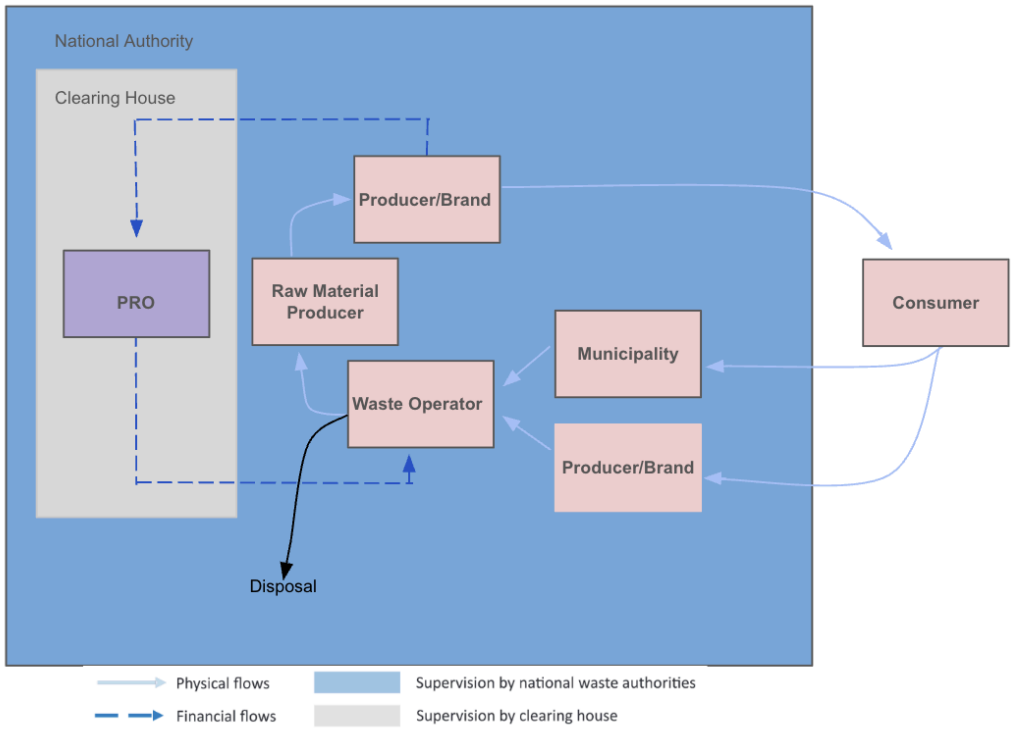
8. Appendix

Appendix A: Timeline of the development of the WFD and related textile legislation.



Appendix B: Interactions between EPR stakeholders.



Appendix C: Structure of Interview Guide with example questions, in English.

Focus	**Example question in interview guide**
CE/CBM/CBMI	*What are the main drivers and barriers for fashion brands in pursuing CBMs?*
	How are Swedish fashion brands integrating circular economy principles (e.g., reuse, resale, rental, repair, recycling) into their business models?
Sustainability Regulations & EPR for Textiles	*What key obligations do fashion brands face under EU's EPR for textiles, and what are the implications for fashion brands?*
	How do Swedish fashion brands plan to handle textile waste under the new EPR framework?
Industry Collaboration	*How are fashion brands collaborating, or planning to collaborate, to comply with EPR and develop CBMs?*
	What are the main drivers and barriers to collaborate in CBMI?
Circularity-enabling Technologies	*What role does technology play in CBMI?*
	What are the main drivers and barriers for implementing technological solutions in CBMI?

Appendix D: Structure of Interview Guide with example questions, in Swedish.

Focus	**Example question in interview guide**
CE/CBM/CBMI	*Vilka är de främsta drivkrafterna och hindren för fashion brands att implementera cirkulära affärsmodeller?*
	Hur integrerar svenska fashion brands "circular economy" principer (t.ex. återanvändning, resale, uthyrning, reparation, återvinning) i sina affärsmodeller idag?
Sustainability Regulations & EPR for Textiles	*Vilka huvudsakliga krav ställs på fashion brands under EU:s nya EPR för textilier, och vilka implikationer för fashion brands medföljer?*
	Hur planerar svenska fashion brands att hantera textilavfall under EU:s nya EPR-framework?
Industry Collaboration	*Hur samarbetar, eller planerar, fashion brands att samarbeta för att uppfylla EPR-kraven och utveckla CBMs?*
	Vilka är de största drivkrafterna och hindren för samarbete inom CBMI?
Circularity-enabling Technologies	*Vilken roll spelar teknologi i CBMI?*

	Vilka är de största drivkrafterna och hindren för att implementera teknologiska lösningar när det kommer till CBMI?

Appendix E: Consent Form for Participation.

Consent to participation in student's survey / interview

The student's project. As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys and interviews connected to the subject. Participation is naturally entirely voluntary, and this text is intended to provide you with necessary information about that may concern your participation in the study or interview. You can at any time withdraw your consent and your data will thereafter be permanently erased.

Confidentiality. Anything you say or state in the survey or to the interviewers will be held strictly confidential and will only be made available to supervisors, tutors and the course management team.

No personal data will be published. The thesis written by the students will not contain any information that may identify you as participant to the survey or interview subject.

Secured storage of data. All data will be stored and processed safely by the SSE and will be permanently deleted when the projected is completed.

Your rights under GDPR. You are welcome to visit https://www.hhs.se/en/about-us/data-protection/ in order read more and obtain information on your rights related to personal data.

Project title	Year and semester
Havander & Sgouridis RM B.Sc. Thesis	3, Spring 2025
Aim of the study: Explore fashion retailers' CBMI in response to sustainability regulations	
Students responsible for the study or interview: Liv Havander and Alma Sgouridis	
Supervisors and department at SSE: Christoph Baldauf, Center for Retailing	Supervisor e-mail address: christoph.baldauf@hhs.se
Type of personal data about you to be processed: Qualitative data through semi-structured interviews, e.g personal opinions and professional experience.	

I have taken part of the information provided above and consent to take part in this study:

Signature	Place and date
Name	

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Appendix F: Coding Structure with Example codes.

Key Question	**Top-level Code**	**Example of Codes**
What circular economy principles are currently	CBMI	Quality & material choice

employed by fashion retail brands, and which are most successful?	strategies	Resale/second-hand
What are the implications of sustainability regulations (EPR) for fashion retail brands?	Implication of EPR	Accelerating green transition
		Unintended effects
What are barriers to CBMI?	CBMI barriers	Structural conditions
		Lack of internal resources
What drives CBMI?	CBMI drivers	Risk mitigation
		Growth opportunity
What are enablers to CBMI?	CBMI enablers	Governmental support
		Recycling technology

Appendix G: AI Transparency Note

AI tools – ChatGPT (chat.openai.com) and Perplexity (perplexity.ai) – have been used throughout the process of this study. ChatGPT has had the role of a sounding board, used to brainstorm ideas, concepts from previous literature, as well as for improving structure, and editing the language of the paper (both in terms of grammar and translations). Moreover, Perplexity has mainly been used for desktop research, to discover accurate sources of information. These tools have contributed to improving the quality of the thesis by rewriting, consolidating and restructuring text produced by the authors, improving clarity and stringency in a time efficient manner. Potential risks using these AI tools included information getting lost, hallucinations, and lack of consistency. These risks were mitigated through critical evaluation by the authors of everything generated by the AI tools, using the pay-version of ChatGPT which enabled configuring a GPT for the specific purpose of this paper, documenting specific information generated by the AI tools, and experimenting with prompting in order to receive satisfactory generations (e.g., “only include the information I have given, and avoid guessing”). Lastly, this AI disclosure has been produced entirely without any AI tools, providing a comparative example of the authentic reasoning and language use of the authors.