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Modelling Social Circular Economy Business Models in the fashion industry: the Atelier Riforma case study

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Abstract

The crucial role of Circular Economy Business Models (CEBMs) in mitigating environmental degradation and decoupling economic growth from material use has been globally recognized in the literature across every economic sector. However, while the environmental benefits of Circular Economy (CE) are well-documented, its social value has only recently begun to receive scholarly attention. Indeed, how organizations with a circular business model and an integrated social mission minimize negative environmental impacts while amplifying positive social outcomes remains unclear. This chapter aims to theorize the emergent Social Circular Economy (SCE) by analyzing a case study focused on Atelier Riforma, an Italian innovative startup with a social vocation in the apparel sector, and modeling novel integrated CEBMs. Employing semi-structured interviews, direct observations, and internal documents, this study sheds light on the operationalization of CE principles intertwined with a social mission. It discusses, in terms of material, financial, and impact flows, how SCE strategies in a sector currently highly unsustainable as the fashion industry may create (financial) value by recovering garments and simultaneously creating both social (i.e., labor value) and environmental (e.g., the reduction of material) value. This chapter, hence, enriches the discourse on CE and the Social and Solidarity Economy (SSE) by illustrating how innovative platform business models may address and assess the dual objectives of environmental sustainability and social equity.

1 – Introduction

The circular economy (CE) is an economic system designed to reduce waste and optimize resource use by maintaining materials in continuous circulation. Unlike the traditional linear economy, which follows a "take-make-dispose"

model, CE seeks to create closed-loop systems where products and materials are reused, repaired, and recycled, thereby preserving their value throughout their lifecycle (Ghisellini et al., 2016; Kirchherr et al., 2017). Circular Economy Business Models (CEBMs) operationalize these principles, focusing on strategies that cycle, extend, intensify, and dematerialize material and energy loops to reduce resource inputs and waste emissions (Moreno et al., 2016; Ünal et al., 2019). These models are designed not only to generate economic value but also to address environmental sustainability by promoting the efficient use of resources (Daou et al., 2020).

Despite the extensive literature on CE and its environmental benefits, there is a notable research gap concerning the social implications of CE and how circular and social dimensions interact within business models (García-Muiña et al., 2021; Pitkänen et al., 2023). While some studies highlight job creation as a social benefit of CE, a comprehensive analysis of how circular practices can be integrated with social missions within business models remains underexplored. Addressing this gap is crucial, especially in industries with significant environmental and social impacts, such as the textile and fashion industry.

The textile and fashion industry is characterized by its resource-intensive nature and substantial environmental footprint, driven by the fast fashion model that promotes rapid production and consumption cycles (Todeschini et al., 2017). This industry faces multiple environmental challenges, including high energy and water usage, pollution from dyes, and significant textile waste (Peters et al., 2021; Saha et al., 2021). Additionally, social issues such as poor working conditions, insufficient wages, child labor, and forced labor are prevalent in the global supply chains of this sector (Desore and Narula, 2018; Köksal et al., 2017). At the end of its value chain, the traditional linear model encourages a cultural mass consumption intersected with inequalities and stratification (Warde, 2015). Social Circular Business Models (SCBMs) in the textile sector have the potential to simultaneously address these environmental and social challenges by integrating sustainable practices with social missions aimed at improving labor conditions and promoting social equity (Arribas-Ibar et al., 2022; Beyer and Arnold, 2022).

This chapter aims to theorize the emergent Social Circular Economy (SCE) by analyzing a case study focused on Atelier Riforma, an innovative Italian startup in the apparel sector. Atelier Riforma integrates circular economy principles with a strong social mission, seeking to mitigate the environmental and social impacts of the fashion industry. By employing semi-structured interviews, direct observations, and internal documents, this study provides insights into how Atelier Riforma operationalizes CE principles intertwined with a social mission. The analysis focuses on material, financial, and impact flows to

demonstrate how SCBMs can generate financial value while simultaneously creating social and environmental benefits.

The structure of this chapter is as follows: The next section provides a comprehensive literature review on CE, SCBMs, and their impact assessment methods. Following this, the methodology section outlines the single case study approach adopted for this research, including data collection and analysis procedures. The results section presents the findings from the case study, highlighting the integration of social and environmental dimensions in Atelier Riforma's business model. The discussion section critically examines these results in light of existing literature, addressing the challenges and implications of implementing SCBMs in the textile sector. Finally, the conclusion discusses the limitations of this study and suggests directions for future research, emphasizing the need for further conceptualization and empirical analysis of SCBMs across different sectors.

By investigating the case of Atelier Riforma, this chapter contributes to the understanding of how SCBMs can address dual objectives of environmental sustainability and social equity, offering valuable insights for researchers, practitioners, and policymakers interested in fostering sustainable development through innovative business models.

2 – Literature review

2.1 Circular Economy

The circular economy (CE) is an economic system designed to minimize waste and optimize resource use by keeping materials in circulation for as long as possible. It aims to reduce the extraction of natural resources and waste by preserving the value of products and materials throughout their lifecycle (Calisto Friant et al., 2020). To achieve this, the CE model seeks to create a closed-loop system in which materials are reused, repaired, and recycled rather than discarded after their initial use. In particular, Suárez-Eiroa et al. (2019) found that the literature proposes three main strategies within the CE paradigm: (i) minimizing inputs of raw materials and outputs of waste, (ii) keeping resource value as long as possible within the system, and (iii) reintegrating products into the system when they reach the end of their life. This approach contrasts sharply with the traditional linear economy based on the “take-make-waste” approach, a neoclassical model that focuses on efficient resource allocation without considering the finite nature of natural resources, resulting in resource depletion and environmental degradation derived from waste disposal and pollution, which could limit the ability of future generations to satisfy their needs. (Ghisellini et al., 2016).

Considering that the CE framework offers an alternative to the linear economy model, authors have argued that the CE transition is emerging as one of the most popular societal responses to environmental problems and to achieving more sustainable development worldwide (Kevin van Langen et al., 2021). For this reason, Kirchherr et al. (2017) argue that the CE can be viewed as an approach to implement the much-discussed concept of sustainable development, defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland and Khalid, 1987). Sustainable development is often framed in the triple bottom line approach, which highlights that sustainable development should simultaneously promote economic development, preserve the environment, and tackle societal issues concerning human beings and their needs (Elkington, 1998). However, the interconnections and integration of sustainable development and CE are highly discussed in the literature. On the one hand, Schroeder et al. (2019) suggest that the circular economy can directly help attain a variety of the UN Sustainable Development Goals (SDGs), and for Korhonen et al. (2018), a successful circular economy contributes to all three dimensions of sustainable development: economic, environmental, and social. Both circular economy and sustainable development rely on multi- or interdisciplinary approaches to better integrate non-economic aspects into development and emphasize intra- and intergenerational commitments and cooperation among stakeholders (Geissdoerfer et al., 2017). On the other hand, some authors also highlight contradictions and gaps in the integration of the two concepts. Geissdoerfer et al. (2017) highlight that sustainability aims to equally benefit the environment, economy, and society, treating these three spheres horizontally. In contrast, CE hierarchically prioritizes economic systems, with primary benefits for economic actors and secondary environmental benefits like reduced resource depletion and pollution, while social benefits are often indirect, such as increased manual labor and fairer taxation (Calisto Friant et al., 2020).

Despite differing views on the integration and interrelation of CE and sustainable development (SD), an advantage of CE is that it can be implemented and analyzed at various levels. While SD, considered by some as a vague concept and difficult to implement by economic actors (Naudé, 2011), primarily focuses on a global perspective, CE can be implemented at the micro, meso, and macro levels (Kirchherr et al., 2017). At the micro level, CE involves single firms or organizations and even specific product-level changes and consumer preferences. The meso level focuses on regional implementations involving multiple organisations, such as eco-industrial parks, where industrial symbiosis is the most studied form of CE implementation (Merli et al., 2018). Finally, the macro level addresses national and global policies and industry structures. An effective transition towards the CE paradigm requires changing traditional patterns across all three levels, from policymakers and regulators to

individual firms and even individuals (Dey et al., 2020). Scholars have predominantly studied CE at the macro level, followed by the micro and meso levels (Merli et al., 2018).

At the micro level, CE involves measuring reduced ecological footprints, direct financial value through material recovery, and growth through new business models (Lewandowski, 2016). The transition of companies towards CE, although in its early stages, requires significant changes in business and managerial practices, including efficient use of energy, materials, and resources to reduce environmental impact (Ünal et al., 2019). This has led to the conceptualization of Circular Business Models (CBMs), which are crucial for the circular economy to flourish in the long run (Geissdoerfer et al., 2020). CBMs are defined as models that cycle, extend, intensify, and/or dematerialize material and energy loops to reduce resource inputs and waste emissions within an organizational system (Geissdoerfer et al., 2020). The value proposition in CBMs is grounded in maintaining the economic value embedded in products after their use and repurposing it for new market offerings, which requires a set of return flows from end users to producers, often through intermediaries (Rosa et al., 2019). The value proposition in CBMs is grounded in maintaining the economic value embedded in products after their use and exploiting it for new market offerings, which requires a set of return flows from end users to producers, often through intermediaries (Selvefors et al., 2024). Based on value proposition typology, Rosa et al. (2019) identify five common CBM archetypes: “share,” which focuses on maximizing goods usage and reducing waste; “regenerate,” aimed at enhancing the earth’s bio-capacity; “optimize,” which improves process efficiency; “loop,” which involves recycling practices; and “virtualize,” which includes solutions that dematerialize systems or deliver them virtually. Besides the type of value proposition, determinants of CBM creation are determined by endogenous and exogenous factors. Assmann et al. (2023) identify eight determinants for introducing CBMs: culture, regulation, market, strategy, business case, collaboration, operations, and knowledge. To understand the specific characteristics of CBMs, tools such as the EcoCanvas, a practical tool for rethinking, developing, and integrating environmental exchanges into business models, help entrepreneurs with a visual tool that explicitly integrates circular economy strategies into different layers of the model (Daou et al., 2020).

2.2 – Social Circular Economy

Given the relevance that CE may play in promoting sustainable development, and the uncertainties regarding how CE can promote social equity or measure its social benefits (Millar et al., 2019), scholars have recently begun to address the social dimension of the circular economy. Social equity and social aspects

are crucial for sustainable development (Souza Piao et al., 2023); hence, for CE to fully promote sustainable development, investigating its social implications is essential. However, considering that only very recently scholars have begun addressing this topic (Pitkänen et al., 2023), aspects regarding the social dimension of sustainable development in CE are still notably underdeveloped, under-conceptualized, and under-researched, particularly in terms of social inclusion (Souza Piao et al., 2023). According to literature reviews by Padilla-Rivera et al. (2021) and Mies and Gold (2021), most studies focusing on the social aspects of the CE do not cover a wide range of perspectives or attempt to build a holistic framework but rather have a narrower focus on impacts such as employment or job creation, education, health and safety, and democratic participation. Both studies emphasize the need for broader inclusion of social aspects in the CE discourse.

From a conceptual point of view, Clube and Tennant (2020) investigated the embedded consideration of human needs within seminal texts on circular economy-related concepts, such as the Blue Economy, Cradle-to-Cradle, Regenerative Design for Sustainable Development, and the Performance Economy. They found that these concepts' original ideas incorporated certain satisfiers of human needs, which seem to have become lost in CE practical forms of implementation. For this reason, Kirchherr (2021) has proposed a conceptual framework to implement circular economy strategies considering the human side through the concept of "circular justice." At the macro level, most studies focus on public health and safety, job creation, social justice, and socio-cultural capital (Mies and Gold, 2021). However, societal issues are mainly approached as corollaries for the circular economy, such as ensuring societal inclusion of informal workers in CE entities (Guibrune et al., 2017), or the role of active societal participation combined with clear political goals in driving societal transformation towards a circular economy.

At the meso level, studies often focus on supply chains. For example, Masi et al. (2017) performed a systematic review of 77 documents discussing the meso level of supply chains in relation to the circular economy. However, most of these studies marginally address social aspects (Souza Piao et al., 2023). Vahidzadeh et al. (2021) conducted a literature review on regional industrial symbiosis, identifying six thematic aspects, one of which dealt with social aspects, specifically highlighting collaborations among stakeholders of symbiosis networks as a key component for successful industrial symbiosis. Additionally, Vanhuysse et al. (2021) find that the current discourse on circular cities is limited, primarily focusing on governance issues related to legal frameworks and citizen participation in waste management systems, with social impacts largely unaddressed.

At the micro level, Walker et al. (2021) studied CE industry perspectives on the social dimension and its assessment through an analysis of multiple CE

companies in Italy and the Netherlands. They found that although the social dimension was considered important, the actual assessment of social impacts was limited. Regarding business models, besides sustainable business models built on the triple bottom line framework, no study has yet been developed on the conceptualization of holistic social CBMs, but there are a few studies addressing their social implications (Salvador et al., 2020) or analyzing the links between CBMs and social business models (Fehrer and Wieland, 2021). The existing literature on CBMs addresses the importance of social networks around which these models are built (Susur and Engwall, 2023), or advocates for the social benefits of CBMs by influencing the behavior of customers and end-users towards upcycling, recycling, and reusing (Lüdeke-Freund et al., 2024). An important body of literature on the social implications of CBMs concerns the assessment and measurement of their societal impacts. Multiple disciplines have assessed this issue and developed specific methods, which will be explored in the following section. Overall, many studies on CE focus on practical stages represented by tools and practical measures (Mies and Gold, 2021). However, critical discussions on the circular economy's theoretical foundations involving the integration of and contribution to the social dimension as intended by sustainable development have yet to take place, as they are often studied peripherally (Souza Piao et al., 2023).

2.3 – Impact assessment of social and circular business model

Schwandt (2015) highlights that evaluating and assessing business models is inherently complex, requiring continuous engagement with current evaluation theory and practice. This complexity is amplified for social and CBMs. While traditional, linear business models primarily focus on economic performance (Kanzari et al., 2022), circular economy models integrate diverse approaches and disciplines aimed at creating regenerative systems (Hidalgo-Carvajal et al., 2021). In particular, regarding metrics for the evaluation of CBMs, Saidani et al. (2024) identify current challenges such as the actual usage and adoption of indicators and methods for measuring CE, the comparison of different products and companies, and the integration of material scarcity, renewable materials, and quality tools. They also emphasize that future studies should address linking social indicators to the evaluation of CE. Evaluation tools for these models must capture success across multiple dimensions, particularly when business models address comprehensive social, environmental, and economic challenges, as seen in sustainability-oriented business models (Mattos et al., 2022). As a result, various tools and methods have been developed to assess the impact of circular and social business models separately.

For evaluating the social and circular value, various methods assess environmental sustainability, one of which is the Cradle to Cradle (C2C)

Certification. The C2C certification, a nongovernmental ecolabel defined by MBDC, is a multi-attribute, continuous improvement methodology evaluating products across five categories of human and environmental health (Llorach-Massana et al., 2015). Built on the C2C concept, it focuses on three principles (Braungart et al., 2007). The first principle, “waste equals food,” designs systems where waste is a nutrient for nature or other industrial processes. The second principle promotes using energy from “current solar income,” emphasizing renewable energy. The third principle, “celebrate diversity,” integrates cultural, economic, and environmental aspects. To achieve the certification, companies must meet requirements across five categories: material health, product circularity, clean air and climate protection, water and soil stewardship, and social fairness (C2C Institute, 2021). These categories are scored on a five-grade scale: basic, bronze, silver, gold, and platinum, reflecting increasing stringency in requirements. For example, the C2C certification demands the use of 100% electricity coming from renewable energy to achieve the highest grade (platinum) in the “Clean air and climate protection” category, among other requirements (C2C Institute, 2021).

The Cradle to Cradle (C2C) certification, while valuable, has been critiqued for not holistically addressing environmental aspects of products from a full life-cycle perspective (Llorach-Massana et al., 2015). It primarily assesses environmental impacts at a micro (product) level, with only one out of five categories evaluating social fairness (Niero et al., 2018). In contrast, B-Corps offer a case that move from product-level to company-level assessments. Incorporating both social and environmental impacts in their assessment, B Corps represent a new form of prosocial enterprising that integrates the purpose of serving the common good into the legal framework of the business (Muñoz et al., 2018). They are businesses that meet the highest verified standards of social and environmental performance, public transparency, and legal accountability, balancing profit and purpose. To be certified as a B Corp, a company must be assessed by B Lab through the B Impact Assessment (BIA) and achieve a score greater than 80 out of 200 points, evaluating five areas: workers, community, environment, customers, and governance (Nigri and Del Baldo, 2018). Becoming a B Corp is not merely an ethical decision but a strategic one, with significant implications for various stakeholders. The BIA and compulsory reporting activities can attract investors and appeal to consumers who prefer certified socially responsible companies, as well as influence entrepreneurial funding decisions (Clark and Babson, 2012). Despite the existence of various reporting standards like the Global Reporting Initiative, SMEs have struggled to adopt them due to the time and resources required. The BIA is simpler and less time-intensive than traditional reporting standards like the GRI, as it does not require a materiality analysis or extensive stakeholder engagement during evaluation and prioritization (Shields and Shelleman, 2017). Nonetheless, BIAs have proven to be effective in assessing social and

environmental impacts, as Nigri and Del Baldo (2018) found that the social and environmental commitments of B Corps are directly integrated into company management, and the BIA results support top management decision-making and strategic planning.

A final evaluation method that comprehensively supports the assessment of societal and environmental impacts is the Theory of Change (ToC) (Mayne, 2017). ToC is primarily used to identify and assess positive impacts, explaining how and why impact happens by mapping pathways that connect interventions to results and providing guidelines on measuring realized impacts (Mayne, 2015). To do so, usually a flowchart based on a logic model that connects activities to short-term outputs, outcomes, and finally long-term impacts is developed to operationalize the Theory of Change and to understand how to select Indicators for measuring the impacts. A key benefit of ToC is its utility in both planning and evaluation phases, illustrating the resources used (inputs) to implement strategies designed to achieve desired results, which helps in identifying impacts through logically connected steps (outputs, outcomes, and impacts) (Margoluis et al., 2009). Originating from social change traditions (Connell and Kubisch, 1998), ToC's malleability has allowed its application in assessing both social and environmental impacts of various different projects and interventions (Anderson, 2018). For instance, Dale et al. (2023) conducted a ToC-based evaluation of a transport intervention in the UK, finding it effective for assessing social, economic, and environmental impacts of public infrastructural interventions. Michelini et al. (2020) applied ToC to a food-sharing platform business model, identifying and assessing positive impacts of the food sharing platform such as environmental benefits derived from food waste reduction and social benefits derived from feeding impoverished people with unsold food. (Mattos et al., 2022) applied ToC to a circular business model case in the metal industry, identifying and measuring economic benefits through cost modeling of recycled versus non-recycled components, environmental benefits from reduced CO2 emissions, and social benefits from higher-quality jobs compared to previously adopted linear models.

Given their increased adoption (Rossi and Luque-Vílchez, 2021), also driven by new legal requirements (Abela, 2022), it is important consider the role of sustainability accounting and reporting practices in assessing and disclosing the social and environmental dimensions (Scarpellini et al., 2020). Numerous standards for sustainability accounting are available for social, circular, and linear businesses (Scarpellini et al., 2020). The "GRI Standards," which have become the leading guideline for voluntary reporting (Halkos and Nomikos, 2021), are built on the triple bottom line framework, requiring disclosure of economic, social (e.g., safety, diversity), and environmental (e.g., waste, emissions) aspects. These standards are widely adopted by CBMs (Opferkuch et al., 2021). However, most sustainability reporting standards do not fully integrate the circular economy. For instance, CE is discussed in the recently

revised “GRI 306: Waste 2020,” effective for reports published on or after January 1, 2022. (Scarpellini, 2022) analyzed how businesses report social impacts related to CE in their sustainability reporting and stakeholder relationships, finding that most professionals operating in CE view CE business models as having positive societal impacts. These impacts include developing new professional opportunities, improved public health due to increased environmental quality and less pollution, and enhanced environmental education for young people. However, the author also argues that most companies adopting CE principles do not report specific societal impacts achieved through closing material loops in a circular model. Additionally, accounting researchers and professional bodies focus on environmental sustainability and reporting but have given limited attention to the concept of circularity (Aureli et al., 2023). These practices are becoming increasingly important as they are also becoming legally required by legislation.

Though this brief presentation of assessment techniques does not aim to be exhaustive, it illustrates the potential tools available to comprehensively address the environmental and social dimensions of circular and social business models.

2.4 – CE in the Textile sector

The fashion industry has experienced significant growth over the past decades, particularly with the rise of fast fashion, which emphasizes rapid acquisition and disposal of mass-produced, standardized fashion items (Fletcher, 2010). This model promotes widespread consumption of easily replaceable garments but has substantial environmental and social drawbacks (Todeschini et al., 2017). The clothing and footwear industries are resource-intensive, with approximately 75% of the energy demand occurring before the garments reach retail (Peters et al., 2021). Many of these products are produced in low-wage countries using non-renewable energy, leading to high environmental impacts. Additionally, the industry is water-intensive, as it requires cotton grown in arid areas requiring extensive irrigation (Thorisdottir and Johannsdottir, 2020), and causes significant water pollution from untreated dye discharge (Saha et al., 2021). From an end-of-life perspective, the EU generated an estimated 6.95 million tons of textile waste in 2020, with a significant portion ending up in landfills or incinerators. Only 4.4 kg per person were collected separately for reuse and recycling (Deckers et al., 2024). Despite pressure on the fashion industry to address environmental and social issues, low-cost production methods remain prevalent, exacerbating consumerism (Thorisdottir and Johannsdottir, 2020).

Considering these multiple environmental challenges, researchers have identified the CE as a potential solution to mitigate the negative impacts of the

textile industry (Abdelmeguid et al., 2024). Saha et al. (2021) analyzed the relationship between five fields of CE actions (take, make, distribute, use, and recover) and the three dimensions of sustainability performance in the textile sector, finding that raw material sourcing and manufacturing still require significant improvements to become environmentally friendly. Abdelmeguid et al. (2024) conducted a comprehensive analysis of management practices, identifying eight key themes essential for driving circular and sustainable practices in the fashion industry: collaborations, marketing strategies, product-related characteristics, education and awareness, business models, integration of technology, regulations and legislation, and strategic planning. In particular, they found that collaboration with suppliers, recyclers, waste management organizations, and consumers is crucial for enhancing efficiency, circularity, and innovation across the value chain. Waste management is also critical, a field in which Solis et al. (2024) found that “preparing for reuse” is the most beneficial managerial practice for waste reduction from both environmental and socio-economic perspectives. Therefore, it is not surprising that the second-hand market has been highlighted as a best practice of sustainable responsibility for businesses and consumers (D’Adamo et al., 2022).

While much of the CE research in the textile sector focuses on environmental aspects, the industry also faces significant social challenges (Thorisdottir and Johannsdottir, 2020). Worker conditions are a major concern, especially in low-wage countries, where fashion brands outsource much of their production (Desore and Narula, 2018). Other social risks include child labor and extensive working hours (Köksal et al., 2017). This has led to increased research and regulatory developments in controlling the textile and clothing industry supply chain (Silva et al., 2023). Corporate Social Responsibility (CSR) practices in this sector are often driven by legal requirements (Nayak et al., 2022), even though they are usually limited in national boundaries even if the supply chain is globalized. Some studies on CBMs in the textile industry also consider their social implications. For example, Barletta et al. (2024) found that leasing practices in the textile industry can address social issues by ensuring ethical conditions for workers and reducing environmental impacts through lower raw material usage and overproduction. Another example is the study by the Impact Institute (2019), which quantifies the “true price” of a pair of jeans by including external social and environmental costs. They estimate that social externalities like insufficient wages, health and safety issues, and child labor, along with environmental externalities like pollution and climate change, would add approximately \$30 to the retail price.

Despite studies in the literature arguing for the potential for circular innovations to improve financial performance (Dainelli et al., 2024), there is a gap in the literature regarding how CBMs can positively impact society beyond mitigating the negative societal issues of traditional clothing and textile supply chains by addressing job conditions (Bubicz et al., 2021). This highlights the

need for further research to explore the comprehensive social benefits of implementing circular economy practices in the textile industry.

3 - Materials and methods

3.1 Single case study research

In this chapter, we adopt a single case study methodology. A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident (Yin, 2018). Unlike other research strategies, such as experiments that isolate the phenomenon from the context to analyze specific variables, case studies are a form of research that is deliberately contextually informed. This approach is often used in business, managerial, and accounting studies because it allows for an in-depth analysis of businesses and various organizations in their natural settings, helping to understand the nature and complexity of the object of study (Voss et al., 2002). Case studies enable exploratory analyses that address the growing frequency and magnitude of changes in technology, business practices, models, and methods. The rich detail provided by case studies increases the likelihood of generating novel theories and creative insights (Cooper and Morgan, 2008).

Our study is based on a single case study, that is a case study where the authors sought to describe the fundamental elements characterizing a phenomenon and the relationships that are established among them (Puntillo et al., 2021). According to Yin (2018) single case offers significant insights to contribute to knowledge and theory building by confirming, challenging, or extending the theory. The single-case study approach is particularly appropriate as it allows us to delve deeply into the complexities and nuances of the phenomenon under investigation within its real-life context, providing rich insights and a comprehensive understanding that other methodologies may not offer.

In our case, the transition towards a circular economy in the fashion and textile sector is still in its early stages, and the comprehensive environmental and societal impacts of organizations adopting a socio-circular business model have yet to be fully explored. Therefore, we employ an in-depth case study approach to gain a comprehensive understanding of this phenomenon. The case study methodology is preferable for exploring new phenomena and allowing for serendipitous findings in idiosyncratic situations (Eisenhardt and Graebner, 2007). An in-depth case study aligns with the goal of this research because studying a single firm in depth enables the development of intimate familiarity, which enhances our ability to extract insights from the data. Additionally, the complex and multidimensional nature of the analysis requires a comprehensive investigation, which is more feasible within a single standalone entity (Dyer

and Wilkins, 1991). Case selection is based on a theoretical convenience sampling strategy (Voss et al., 2002). Following this strategy, we selected a startup conceived with a circular business model in the textile and fashion sector operating in Turin, Italy. Founded in 2020, this case stands out as an early adopter of a business model that facilitates circular practices within the textile and fashion industry.

We developed the case study based on multiple qualitative data sources, primarily interviews and archival documents. Using various information sources allows for triangulation, enhancing the reliability of the findings (Bowen, 2009). Document analysis included materials from the company's online website, internal documents, a business model canvas, and a social and environmental impact report developed by the startup. Semi-structured interviews were conducted with the CEO and her collaborator of the startup, as well as with the CEO of a second circular firm operating downstream in the value chain of the case. This second interview allowed us to increase data sources on our case and thus to avoid post-hoc rationalizations and increase the reliability of our study (Ünal et al., 2019). Semi-structured interviews, chosen for their flexibility and ability to elicit crucial insights (Qu and Dumay, 2011), lasted approximately one hour and were conducted online. No materials or questions were shared prior to the interview, though transcripts were provided to the interviewees afterward. Questions focused on the circular value proposition, social contributions, opportunities and weaknesses of the business models, barriers and drivers to scaling up socio-CBMs in the textile sector, and the identification and evaluation of the startup's environmental and social impacts, particularly their interaction. Table 1 shows the interview questions. To ensure the methodological rigour we have developed a research protocol according to Yin (2018), shown in table 2.

Table 1 - Interview questions

When and how was the startup conceived?
What is the vision and mission of the startup?
What is the business model and has it changed over time?
What are the strengths, weaknesses, opportunities and threats of your business model?
What are the main barriers for the scale-up of the circular startup?
What is the social value proposition of the startup?
To what extent are the social and environmental dimensions interrelated in the startup operations and impacts?
Who are the beneficiaries of your positive social and environmental impacts?
How do you assess and evaluate social and environmental impacts?

How and to what extent are you able to measure the integration of social and environmental impacts?
What are the barriers to social and environmental impact assessment and evaluation?

Table 2 - Research protocol

Planning and design	<p><i>Research question:</i> How are the social and environmental impacts interrelated in a startup with a social circular business model in the textile sector?</p> <p><i>Methodological approach:</i> single case study.</p> <p><i>Case study selection:</i> The case was selected based on a theoretical convenience sampling strategy (Voss et al. 2002) given the relevance of the case for the research question and accessibility to data collection.</p>
Data collection	<p>Data collection was developed in three phases. The first phase involves a critical review of the literature on the topic of social CBMs and their assessment and evaluation, with a focus on the textile sector. This phase is necessary to analyze the data in the context of existing literature and is presented in section 2. The second phase concerns the analysis of the startup's public documents and archives (including its website) and internal strategic documents including a business model canvas, an environmental and social impact assessment based on the theory of change, and a feasibility study of the startup's operations. The third phase includes the interview with the startup's CEO and her collaborator, along with a second interview with the CEO of a second circular firm operating downstream in the value chain of the case actor to better triangulate findings and gather an external informed perspective on the case.</p>
Data analysis	<p>The interviews were transcribed and analyzed concurrently by the authors, who developed a</p>

	coding system to capture the main themes and insights resulting from the interviews.
Presentation of the results	The results were presented in light of the literature reviewed in the first phase of data collection. Through this analysis, the identified main characteristics of the startup which are able to qualify it as a startup adopting a social circular business model are presented in the results section through a business model canvas, the results of theory of change analysis, and a material-impact-financial flow analysis developed by the authors.

3.2 – Case study description

Atelier Riforma was conceived between 2018 and 2019 when the two co-founders met during a postgraduate educational program on entrepreneurship aimed at recent graduates interested in launching innovative startups. Sharing similar visions and ideas, they developed the concept during the course, leading to the formal establishment of Atelier Riforma as an innovative social startup in 2020. The startup's mission is to mitigate the environmental and social impact of the fashion industry through a circular economy approach.

Initially, Atelier Riforma operated on a B2C model, focusing on the collection, cataloging, and upcycling of used garments. Individuals and organizations donated discarded clothing, which was then carefully cataloged, recording all its characteristics (condition, composition, type, person/entity of origin, etc.). After this process, garments were divided into those suitable for the second-hand market and those needing to be fixed and repaired before being ready to be sold (upcycling). The latter were distributed to a network of over 25 tailors, designers, and social tailoring workshops across Italy, including social enterprises that promoted labor inclusion of disadvantaged individuals such as migrants, ex-prisoners, and women victims of violence. The upcycled garments were sold on an e-commerce platform, with Atelier Riforma retaining a percentage of the sales. Despite its innovative approach, this model proved financial unsustainability due to the labor-intensive process, high marketing costs, and challenges in attracting investors. Recognizing these limitations, the founders innovated their business model by designing Re4Circular in 2021 (subsequently succeeding in fully developing the solution during the years 2022 and 2023). Re4Circular is an AI-based technology designed to automate the classification and sorting of used garments, addressing the inefficiencies of

the initial business model. By photographing each garment and its label, the AI extracts essential data such as color, type, season, and material composition. This information determines the most suitable circular destination for each garment, whether reuse, upcycling, recycling or others. Once classified, garments are uploaded on a digital platform, connecting entities and companies with pre- or post-consumer clothing, such as collection and sorting organizations, with circular fashion businesses that need these materials for resale, recycling, or upcycling activities.

Re4Circular operates as a B2B digital marketplace, facilitating transactions between garment collectors and circular fashion businesses. The classification technology linked to the platform ensures transparency and efficiency by providing detailed images and information about each garment, allowing businesses to make informed purchasing decisions. This system eliminates the traditional bulk buying of garments sight unseen, which often leads to inefficiencies and additional sorting post-purchase. Instead, circular businesses can search for and purchase only the garments that meet their specific needs, significantly improving the overall efficiency of the circular fashion value chain.

Atelier Riforma's vision is to transform the fashion industry into a sustainable model based on circular economy principles. Their mission is to minimize the use of virgin resources and reduce textile waste by promoting the reuse, upcycling, and recycling of post-consumer garments. By leveraging Re4Circular, Atelier Riforma aims to create a transparent, efficient, and scalable system that maximizes the value of used textiles and supports the fashion industry's transition to a circular economy. Currently, Atelier Riforma operates from Turin, Italy, with a team that includes a CEO, a COO, a CMO and a collaboration with 2 tech companies: one for AI development and the other for the platform and web app development. For financial sustainability, the platform charges a fee on sales and plans to introduce an annual subscription fee for the users once the classification technology is fully developed. By providing an automatic classification technology and a digital marketplace for the wholesale commerce of pre- and post-consumer unused textiles, Atelier Riforma contributes to enhancing the overall sustainability of the fashion industry. In addition to their core operations, Atelier Riforma is developing a service to monitor textile waste collection in urban areas, aimed at municipalities. This service will provide transparency regarding the quantities and destinations of recovered textiles, further supporting sustainable practices at a municipal public level.

Since its conception, Atelier Riforma has transitioned from a labor-intensive B2C model to a scalable B2B model powered by AI technology, facilitating efficient and transparent transactions in the circular fashion value chain. This innovative approach not only supports environmental sustainability but also

promotes social equity by involving disadvantaged individuals in system of stakeholders engaged. The startup continues to evolve, aiming to drive systemic change in the fashion industry towards a more circular and sustainable model. The startup's long-term vision includes promoting a fully regenerative fashion industry where garments are designed to last and be easily repaired, reused, transformed, or recycled. By ensuring that no garment becomes waste, Atelier Riforma aims to create economic value, generate new employment opportunities, and significantly reduce the environmental impact of the fashion industry.

4 – Results

To investigate how the social and environmental impacts are interrelated in its social circular business model, different assessment methods are used and presented in this results section. First, a social circular business model adapted from Robinson (2017) is used to understand the status social, environmental and economic value proposition, mapping its key business functions. Then, an impact assessment based on ToC is presented in section 4.2 and finally, an impact-material-financial flow analysis is presented. The results are critically discussed in the discussion section (5) in light of the relevant literature.

4.1 - Social circular business model

The social circular business model canvas of Atelier Riforma (Figure 1) was developed based on a traditional business model framework independently created by the company along with the development of the technology Re4Circular and the consequent introduction of the new B2b business model. It was then adapted to the social circular business model canvas developed by Robinson (2017), highlighting not only the economic value proposition but also the social and environmental aspects. This adaptation involved mapping key activities according to their contributions across social, environmental, and economic dimensions.

Figure 1 - Atelier Riforma social circular business model canvas

<p>KEY PARTNERSHIPS</p> <ul style="list-style-type: none">• Courier for transport of purchased textiles from sellers to buyers• Tech company(ies) for IT co-development of our technology• Provider of the online payment system for the marketplace	<p>KEY ACTIVITIES</p> <ul style="list-style-type: none">• Customer(r) research, screening, acquisition and retention (S, EN, EC)*• Supply of the technology, training of the users, installation in their spaces (EN, EC)*• Communication &PR (S, EN, EC)• Updating and preparation of material for consultancies (S, EN, EC)*• Tech development (EN, EC)* <p>*S = social; EN = environmental; EC = economic</p> <p>KEY RESOURCES</p> <ul style="list-style-type: none">• Our Re4Circular software with AI-powered automatic classification + digital marketplace platform• Equipment for classification• Patent of Re4Circular tech• Personnel• Big dataset with photos and data of udes clothes• funds from investors• Know-how and network of contact in circular fashion	<p>VALUE PROPOSITION</p> <ul style="list-style-type: none">• Multisided marketplace for wholesale commerce of used/deadstock textiles + AI powered sorting and digitalization technology <p>.....</p> <p>SOCIAL VALUE</p> <ul style="list-style-type: none">• Tool for sellers to ensure transparency, valorize their social commitment in hiring disadvantaged personnel.• Contribution to creation of a socially responsible circular textile community <p>.....</p> <p>ENVIRONMENTAL VALUE</p> <ul style="list-style-type: none">• Waste avoidance• Facilitation of socially, environmentally and economically sustainable upcycling practices <p>.....</p> <p>ECONOMIC VALUE</p> <ul style="list-style-type: none">• Economic valorization of textile collected• For sellers: compliance with regulations on textile waste and unsold goods fo sellers• Convenient channel for sourcing materials	<p>CUSTOMER RELATIONSHIPS</p> <ul style="list-style-type: none">• Contract with users• Tutorials, presentations, training on how to use Re4Circular• Customer assistance service• Faq on the website <p>CHANNELS</p> <ul style="list-style-type: none">• Our digital platform (Re4Circular)• Sector events (fashion events, fairs, conferences)• E-mails• Social networks	<p>CUSTOMER SEGMENTS</p> <p>SELLERS:</p> <ul style="list-style-type: none">• Used clothes collection entities (cooperatives, NGOs, waste management companies)• Fashion brands with deadstock <p>BUYERS:</p> <ul style="list-style-type: none">• Second-hand shops• Upcyclers, artisans• Recycling companies
<p>COST STRUCTURE</p> <ul style="list-style-type: none">• Fixed: Personnel, R&D and IT development + maintenance, marketing, administration and legal costs• Variable: Purchase and supply of the equipment for using our technology, online service payment provider			<p>REVENUE STREAMS</p> <ul style="list-style-type: none">• Fee on transactions on the marketplace• Annual subscription to use the technology• Consultancies and training courses on circularity applied to the textile and fashion industry	

Source: Authors' elaboration inspired by Robinson (2017)

To understand the three dimensions of Atelier Riforma's value proposition, it is necessary to analyze its key activities, which have been mapped in the social circular business model canvas based on their social, environmental, and economic contributions. The environmental implications are deeply embedded in their business model, as their technology is designed to facilitate transactions among circular entities in the textile sector. Specifically, Atelier Riforma promotes waste avoidance by enabling efficient and economically viable transactions among businesses that recycle, upcycle, or reuse textiles. This system enhances transparency and efficiency in the supply chain for circular garments. For this reason, the environmental dimension covers all the key activities: customer research and retention to engage the actors of the textile and fashion industry in circular practices, the supply of the technology (and related activities such as tech development) to facilitate circular transactions, communication and public relations to increase awareness on the topic, and the preparation of materials for consultancies on the circular economy.

The social dimension is particularly evident in multiple aspects. First, it emerges in their efforts to engage clients within the value chain who are committed to social responsibility. These clients ensure good working conditions for disadvantaged groups, and Atelier Riforma's technology supports these businesses, promoting social inclusion in the sector. Therefore, the activities related to customer research, screening, acquisition, and retention become activities with intrinsic social value as they facilitate business for socially responsible organizations promoting social inclusion through hiring disadvantaged people in good working conditions. Secondly, Atelier Riforma's continuous public information and dissemination activities on responsible consumption and the circular economy in fashion help promote greater awareness among citizens and positively influence their behavior (inform, buy less, choose second-hand, use longer, repair, swap, donate, discard responsibly, etc.). Finally, Atelier Riforma provides its technology free of charge to non-profit organizations that collect used clothes for solidarity purposes, allowing them to use it for clothes unsuitable for these users. This leads to two positive results: the organization will not have to bear the cost of disposing of the unused garments and will instead earn from their resale to circular businesses, thereby having more income to support its solidarity activities. Considering these social impacts, Atelier Riforma also contributes to the development of a socially responsible circular community involving key organizations in the value chain, contributing to the development of a socially responsible branch of the textile and fashion industry.

Regarding economic value, Atelier Riforma aims at capturing a part of the economic value it generates through the facilitation of transparency, automation of sorting activities, and valorization of the intrinsic value of garments and textiles which, if treated and commercialized properly, can become a new resource instead of waste. Atelier Riforma captures this

economic value through transaction fees on the marketplace and subscription fees to use the technology they provide. These core business activities are also complemented by consultancies and training courses on circularity applied to the fashion industry.

In general, the main contribution to the reduction of environmental impacts in the fashion and textile sector is constituted by waste avoidance and potentially reduced exploitation of natural resources, as the broader the reach of the circular textile business becomes, the less textile waste is generated and the fewer resources are depleted for new textile production (assuming that average quantity consumption does not vary in the transition from linear to circular goods). Additionally, there is a societal impact resulting from the creation of a socially responsible community among value chain actors. This community's work and social responsibilities are recognized and valorized, reinforcing the integration of social and environmental values in the business model.

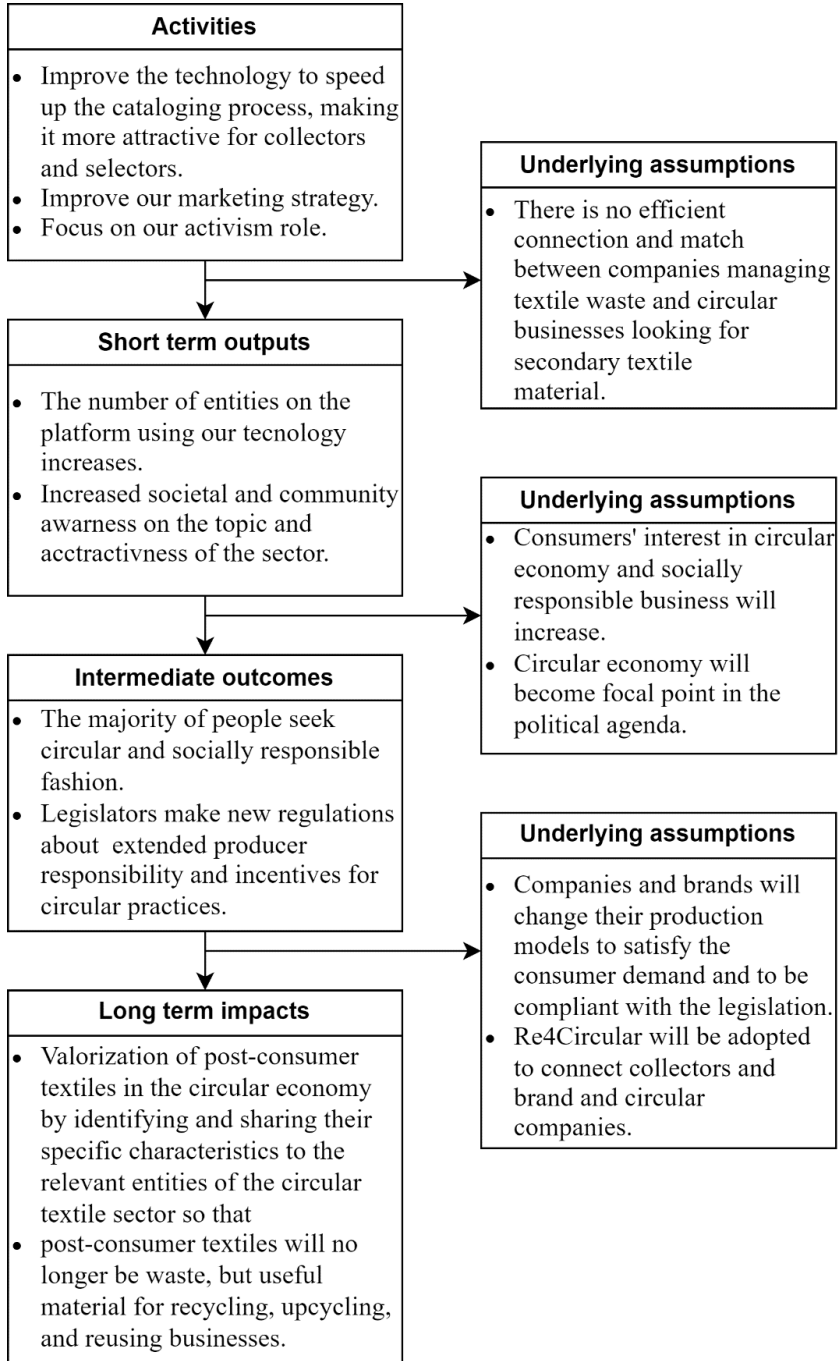
4.2 – Theory of change impact assessment

The Theory of Change analysis conducted by Atelier Riforma is a prospective analysis, meaning that the actual impacts have not yet been measured. This initial planning outlines the expected impacts that Atelier Riforma aims to achieve and how they will be measured. The primary aim is to transform the fashion industry's production model from a linear, wasteful system to a sustainable, circular economy model. Atelier Riforma plays multiple roles: connector, resource provider, scaler, and activist. These roles synergistically contribute to changing the system by addressing the inefficiencies in managing post-consumer textiles.

Atelier Riforma's Theory of Change outlines their vision of a future where post-consumer textiles are no longer waste but valuable materials for recycling, upcycling, and reuse. The ultimate outcomes they seek include the valorization of post-consumer textiles in the circular economy and the establishment of a system where the specific characteristics of textiles are identified and shared. Intermediate outcomes necessary to achieve this vision include widespread consumer demand for sustainable and circular fashion and legislative support through regulations and incentives for circular practices. In the short term, Atelier Riforma aims to focus on activism to raise awareness and drive demand for circular fashion. They plan to enhance their technology to speed up the cataloging process, making it more attractive for collectors and selectors of used textiles. This includes improving their marketing strategy to reach more circular buyers and facilitate the efficient and transparent management of post-consumer clothing. The direct impacts expected in the short term include increased efficiency in sorting and cataloging used garments, enhanced transparency in the supply chain, and greater economic viability for circular

transactions. Through its activities, Atelier riforma aims to impact various categories of stakeholders, including Entities managing textile waste, circular fashion businesses, municipalities and citizens. These impacts are anticipated to lead to long-term outcomes such as reduced textile waste, decreased exploitation of virgin resources, and the creation of a socially responsible community within the fashion industry. Figure 2 shows a visual flowchart summarizing the logic model behind Atelier Riforma's Theory of Change.

Figure 2 - Flowchart of Atelier Riforma's Theory of Change



Source: authors' elaboration

To measure these impacts, Atelier Riforma has identified several key indicators. These indicators will help determine whether the expected impacts have been achieved. For environmental impacts, they will track the number of used clothes and deadstock fabrics cataloged and uploaded on the platform, the materials they are made of, and the proportion of clothes sold versus those available on the marketplace. Additionally, they will monitor the impact on transport pollution by assessing the stimulation of the local market and the reduction of global transport distances resulting in reduced CO2 emission. For socio-economic impacts, they will assess how the platform affects local circular businesses, the increase in the market for recycled/upcycled/reused clothes, the promotion of artisanal competencies that fast fashion has been eroding and the number of citizens engaged through social media platforms through the dissemination and activist activities. They will also track the number of new local employees hired by circular companies and organizations due to Re4Circular.

Atelier Riforma's approach involves continuously refining their technology and strategies based on these indicators to ensure they are on the right track towards achieving their long-term vision. The success of their Theory of Change relies on their ability to validate the assumptions that consumer demand and legislative support will drive the adoption of circular practices and that their technology will effectively connect collectors and circular businesses.

4.3 – Financial material impact flow analysis

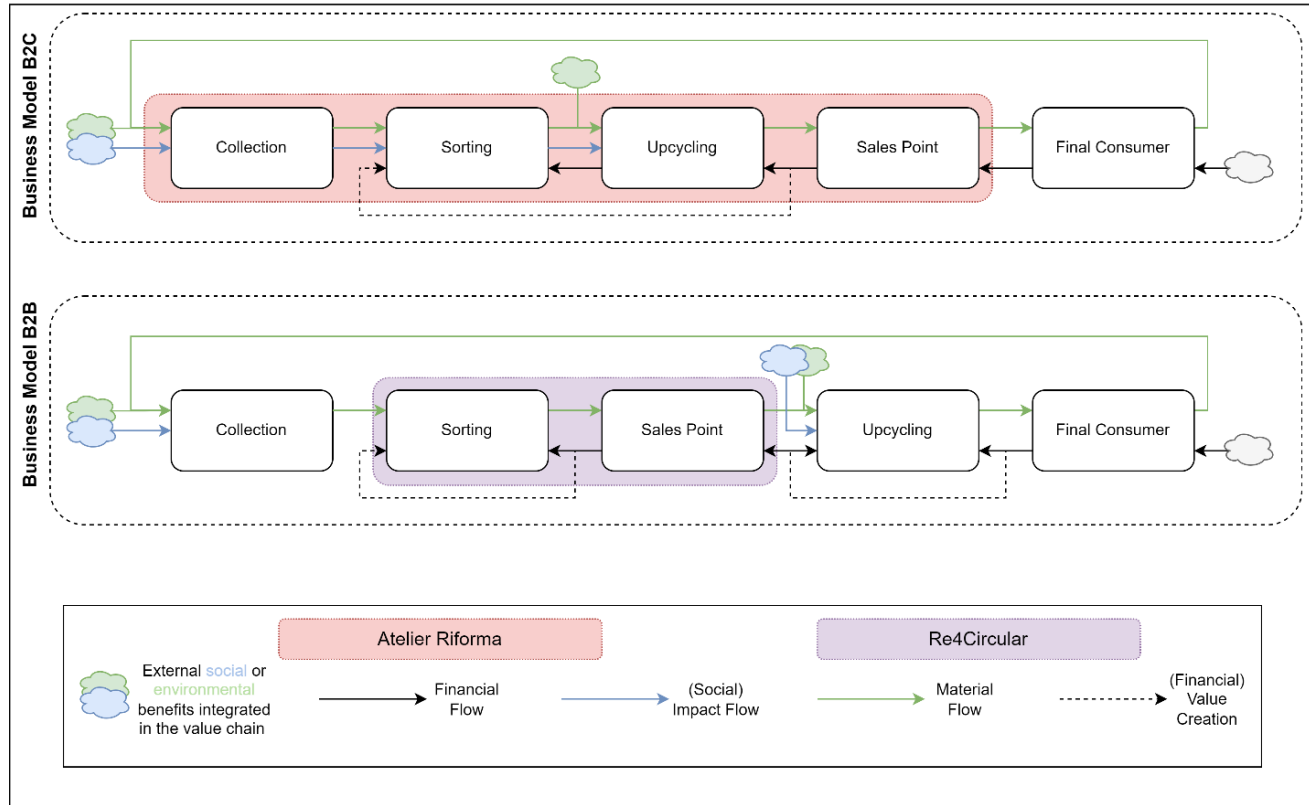
To understand the flows of environmental, social, and economic impacts activated and generated by Atelier Riforma, we conducted a material and impact flow analysis. This analysis maps material (environmental benefits mainly from waste avoidance), impact (positive social impact), and financial (economic value) flows. We elaborated on two flows: one based on Atelier Riforma's initial B2C business model and a second flowchart focusing on the B2B business model based on Re4Circular technology.

In this analysis, depicted in Figure 3, the three diverse flows are mapped across the main steps of Atelier Riforma's value chain. While it does not constitute a fully developed material/substance flow analysis (Huang et al., 2012), the material flows represented in the figure show the environmental benefits derived from waste and resource depletion avoidance, which run across all stages of both business models. The flowchart also highlights how social impacts are internally generated by Atelier Riforma in the B2C business model, whereas in the B2B model, they are indirectly promoted through the technology and valorization of socially responsible partners.

The flowchart further maps the financial flows. In the B2C business model, financial value is directly captured by the startup from the final consumers and backwardly runs across the steps of the value chain. On the other hand, in the B2B model, the financial value is indirectly captured from final stakeholders. The startup generates its revenues by taking a margin on the economic benefits it produces for sellers and buyers through its technology and online marketplace.

By examining these flows, we can see that Atelier Riforma's business models both contribute to reducing environmental impact and promoting social inclusion, though in different ways. The B2C model involves more direct engagement with consumers and internal generation of social impact, while the B2B model leverages technology to scale these impacts through partnerships. The financial sustainability of the startup is maintained in both models by capturing economic value either directly from consumers or indirectly through a margin on transactions facilitated by the platform.

Figure 3 - Financial material impact flow analysis



Source: authors' elaboration

5 - Discussion

5.1 Atelier Riforma's social and environmental impacts

Regarding environmental impacts, the main contribution of Atelier Riforma in reducing environmental impacts in the fashion and textile sector is waste avoidance and potentially reduced exploitation of natural resources. As the circular textile business expands, less textile waste is generated, and fewer resources are depleted for new textile production, assuming that average consumption levels do not increase in the transition from linear to circular goods, as assumed by studies such as (Saha et al., 2021). This reduction in environmental impact is reflected in the indicators selected to monitor the used clothes and deadstock fabrics cataloged and uploaded on the platform, which measure waste avoidance (Shirvanimoghaddam et al., 2020), and by measuring the CO₂ emissions avoided by promoting short supply chains within the local circular market, as opposed to traditional linear garments transported across global value chains (Chen et al., 2021). The financial material impact flow analysis captures how environmental impacts shift with the modification of the business model. Specifically, the Re4Circular technology contributes to upcycling and reuse, even without physically managing the material, thereby externalizing (but promoting) a portion of the positive environmental impacts of the business. Given the embeddedness of the startup's environmental mission, Atelier Riforma qualifies as a Mission Centric enterprise according to Alter's (2007) social enterprise classification. This means that the enterprise is central to the organization's environmental mission.

The social dimension of Atelier Riforma's impact is substantial and multifaceted. The company's efforts to promote good working conditions for disadvantaged groups directly address significant social externalities in the traditional linear model of the textile industry, such as insufficient wages, health and safety issues, child labor, and forced labor (Desore and Narula, 2018). This aligns with broader literature emphasizing the need for ethical labor practices in global supply chains. Additionally, Atelier Riforma's public information and dissemination activities on responsible consumption resonate with the goals of sustainable development (Geiger et al., 2018) and the United Nations Sustainable Development Goal 12, which advocates for responsible consumption and production (SDG 12). Moreover, promoting responsible consumption through continuous public engagement empowers consumers, transforming them from mere buyers to active citizens who make informed decisions about their purchases and their environmental impact (Fischer et al., 2021; Hertwig and Grüne-Yanoff, 2017). Considering that Atelier Riforma also provides its technology free of charge to non-profit organizations that collect used clothes for solidarity purposes, its social impact broadens to encompass a

wider empowerment of the local community. This social value extends beyond providing increased new employment opportunities for disadvantaged people to encompass political, economic, social, emotional, creative, and self-development domains (Tanekenov et al., 2018), promoting a socially responsible circular community.

We argue that these aspects qualify the social mission of Atelier Riforma as an important part of its business, and by adopting Alter's (2007) social enterprise classification, it can be considered at least mission-related. A final consideration is that even though the startup has automatic social value spillovers occurring alongside its key operations, it does not deliver its social value directly through its products to its clients. According to (Santos et al., 2015), this may result in an intermediate risk of mission drift and a moderately difficult path to financial sustainability. However, this is only valid for the social dimension of the value spillovers, as the environmental value is fully embedded in its business operation. This comprehensive approach to social impact underscores the company's role in fostering a socially inclusive and environmentally sustainable fashion industry.

5.2 – Towards a social circular business model and its assessment

From the results and discussion of Atelier Riforma's social and environmental impacts, it is clear that these dimensions are fully present and coexist in the business model. This was highlighted during the interview with the CEO, who stated that:

the environmental and social dimensions are closely integrated. At times, the emphasis may shift more towards one aspect or the other depending on the circumstances, but generally, Atelier Riforma's social and environmental initiatives support and reinforce each other. This intersection is fundamental for the sustainability of our circularity-based business model.

The integration of these aspects is also evident in the key activities mapped in the social circular business model canvas, which show that many business initiatives, such as the promotion of upcycling through socially responsible organizations in the textile sector, and the communication, sensitization, and activist roles to empower the community through promoting circularity practices, are intertwined. This integration also emerges in the financial material impact flow analysis, which maps the social and environmental values through the key steps of Atelier Riforma's value chain.

Based on these premises, we claim that Atelier Riforma constitutes a case of an integrated social-circular business model in the textile sector. Beyond its key circular operation of recovering garments that would otherwise become waste,

the startup responds to the final consumer's needs for transparency and valorization of virtuous organizations in this sector. This activity has the potential to significantly influence the development of apparel firms' business models, pushing companies toward a circular model (Abbate et al., 2023). However, it should be noted that despite multiple studies addressing CBMs in the textile, apparel, and fashion sector (Salmi and Kaipia, 2022), the conceptualization and potential contribution to sustainability of social circular business models in this industry have not yet been investigated in the literature. Although studies like those by Hultberg and Pal (2021) have examined strategies for scaling CBMs in this sector, and Oliveira Neto et al. (2024) have identified circular practices for executing new projects that meet customer needs, the potential implications of social circular business models have not yet been directly tackled.

The relevance and integration of social and circular aspects are evident from our results, but assessing, measuring, and accounting for the added value derived from this integration is challenging. The business model canvas shows key activities and maps specific operations where social and environmental spillover values emerge, but it is not a useful tool for impact assessment (Daou et al., 2020). Through their Theory of Change analysis, Atelier Riforma has identified social and environmental indicators to assess their impact. However, as the CEO stated, assessing and measuring the value derived from the integration and interrelation of the social and environmental aspects remains very challenging, even with the Theory of Change approach. This difficulty is reflected in the lack of research on social circular business models and the absence of methods and tools to guide this type of assessment (Millar et al., 2019).

5.3 - Limitations and future research 15.30

A first limitation of our study is that the adoption of a single case study methodology limits the contribution of this study to the specific context examined (Vaivio, 2008). The insights derived from Atelier Riforma's experience are confined to the textile sector, even though social circular business models may exist in other sectors. Additionally, our analysis has not been longitudinal; tracking the evolution of the business over time could provide new insights into the development of a social circular business model in the textile sector. Furthermore, a suggestion for future studies is to incorporate a comparative analysis of multiple cases to enhance the generalizability of the findings.

Future research should focus on further conceptualizing social circular business models, particularly to understand their presence and main differences across various sectors. It is crucial to explore integrated impact assessment, financial

sustainability, scalability, and contributions to sustainable development within this framework. Our study focuses on the micro-level; thus, future studies could expand the scope of analysis to the meso-level to fully capture the empirical emergence of integrated social and environmental circularity models in the expanding circular textile sector (Pitkänen et al., 2023). Finally, despite the identification of social impacts related to community development and empowerment emerged from our data, we were unable to fully capture and assess these impacts in our financial material impact flow analysis, as it is limited to the main steps of Atelier Riforma's value chain. Future studies should develop methods to comprehensively assess and account for all the integrated and intertwined social and environmental implications derived from these kind of social circular business activities and the beneficial effects of integrating these two aspects.

6 - Conclusions

This study illuminates the integration of social and environmental dimensions within circular business models through the detailed case analysis of Atelier Riforma. By examining this innovative startup, we have demonstrated how such models can simultaneously achieve environmental sustainability and social equity, addressing significant challenges in the textile and fashion industry. The environmental benefits are evident through waste reduction, resource efficiency, and increased transparency in the textile and fashion circular sector promoted by the Re4Circular technology, while the social impacts include improved labor conditions and community empowerment.

Atelier Riforma's business model showcases the potential of integrating CE principles with a strong social mission. The case study reveals that the startup's activities, from promoting upcycling to supporting disadvantaged groups, create a synergistic effect that enhances both social and environmental outcomes. This dual impact is essential for fostering a sustainable and inclusive fashion industry. However, the challenge remains in accurately assessing and measuring these intertwined impacts. Traditional tools like the business model canvas and Theory of Change provide frameworks, but there is a need for more sophisticated methods to capture the full spectrum of benefits derived from the interaction of social and environmental value spillovers and their interrelation in circular business models.

Our findings suggest that Atelier Riforma serves as a valuable model for other sectors looking to adopt similar integrated approaches. The startup's evolution from a labor-intensive B2C model to a scalable B2B platform powered by AI highlights the importance of innovation and adaptability in achieving sustainability goals. The use of technology not only improves efficiency but

also expands the potential for broader impact by connecting various stakeholders in the circular fashion value chain.

Despite the promising results, this study acknowledges several limitations. The single case study approach confines the findings to the specific context of the textile sector, and the lack of longitudinal analysis limits our understanding of the long-term impacts. Future research should explore multiple cases across different sectors to generalize the findings and provide a comprehensive understanding of social circular business models. Additionally, developing robust methods for impact assessment remains a crucial area for further investigation.

The implications of this study are significant for researchers, practitioners, and policymakers. It underscores the need for continued development of SCBMs and their integration into various industries. Policymakers, in particular, can play a pivotal role by creating supportive regulations and incentives that promote the adoption and scalability of these models. For practitioners, the insights from Atelier Riforma offer practical guidance on implementing and scaling social circular initiatives.

This study contributes to the growing body of literature on social circular business models by providing a detailed case analysis of Atelier Riforma. It highlights the potential of these models to address dual objectives of environmental sustainability and social equity through circularity principles, offering valuable insights for fostering sustainable development through innovative business practices. The findings underscore the need for continued research and development of methodologies to fully assess and harness the benefits of social circular business models in various industries. The journey of Atelier Riforma exemplifies the transformative potential of integrating circular economy principles with social missions, paving the way for a more sustainable and equitable future in the fashion industry and beyond.

References

- Abbate, S., Centobelli, P., Cerchione, R., 2023. From Fast to Slow: An Exploratory Analysis of Circular Business Models in the Italian Apparel Industry. *Int J Prod Econ* 260, 108824. <https://doi.org/10.1016/j.ijpe.2023.108824>
- Abdelmeguid, A., Afy-Shararah, M., Salonitis, K., 2024. Towards circular fashion: Management strategies promoting circular behaviour along the value chain. *Sustain Prod Consum* 48, 143–156. <https://doi.org/10.1016/j.spc.2024.05.010>

Abela, M., 2022. “A new direction? The ‘mainstreaming’ of sustainability reporting.” *Sustainability Accounting, Management and Policy Journal* 13, 1261–1283. <https://doi.org/10.1108/SAMPJ-06-2021-0201>

Alter, K., 2007. Social enterprise typology. *Virtue ventures LLC* 12, 1–124.

Anderson, M., 2018. Fair trade and consumer social responsibility. *Management Decision* 56, 634–651. <https://doi.org/10.1108/MD-01-2017-0013>

Arribas-Ibar, M., Nylund, P.A., Brem, A., 2022. Circular business models in the luxury fashion industry: Toward an ecosystemic dominant design? *Curr Opin Green Sustain Chem* 37, 100673. <https://doi.org/10.1016/j.cogsc.2022.100673>

Assmann, I.R., Rosati, F., Morioka, S.N., 2023. Determinants of circular business model adoption—A systematic literature review. *Bus Strategy Environ* 32, 6008–6028. <https://doi.org/10.1002/bse.3470>

Aureli, S., Foschi, E., Paletta, A., 2023. Management accounting for a circular economy: current limits and avenue for a dialogic approach. *Accounting, Auditing & Accountability Journal* ahead-of-print. <https://doi.org/10.1108/AAAJ-04-2022-5766>

Barletta, M., D’Adamo, I., Garza-Reyes, J.A., Gastaldi, M., 2024. Business strategy and innovative models in the fashion industry: Clothing leasing as a driver of sustainability. *Bus Strategy Environ*. <https://doi.org/10.1002/bse.3723>

Beyer, K., Arnold, M.G., 2022. Examining the social side of sustainability in the debate on business model innovations in the textile, clothing and fashion industry: a typology based on the value chain perspective. *International Journal of Innovation and Sustainable Development* 16, 322–371. <https://doi.org/10.1504/IJISD.2022.123908>

Bowen, G.A., 2009. Document Analysis as a Qualitative Research Method. *Qualitative Research Journal* 9, 27–40. <https://doi.org/10.3316/QRJ0902027>

Braungart, M., McDonough, W., Bollinger, A., 2007. Cradle-to-cradle design: creating healthy emissions – a strategy for eco-effective product and system design. *J Clean Prod* 15, 1337–1348. <https://doi.org/10.1016/j.jclepro.2006.08.003>

Brundtland, G.H., Khalid, M., 1987. *Our common future*. Oxford University Press, Oxford, GB.

Bubicz, M.E., Dias Barbosa-Póvoa, A.P.F., Carvalho, A., 2021. Social sustainability management in the apparel supply chains. *J Clean Prod* 280, 124214. <https://doi.org/10.1016/j.jclepro.2020.124214>

C2C Institute, 2021. Cradle to cradle Certified Version 4.0 Product Standard.

Calisto Friant, M., Vermeulen, W.J.V., Salomone, R., 2020. A typology of circular economy discourses: Navigating the diverse visions of a contested paradigm. *Resour Conserv Recycl* 161, 104917. <https://doi.org/10.1016/j.resconrec.2020.104917>

Chen, X., Memon, H.A., Wang, Y., Marriam, I., Tebyetekerwa, M., 2021. Circular Economy and Sustainability of the Clothing and Textile Industry. *Materials Circular Economy* 3, 12. <https://doi.org/10.1007/s42824-021-00026-2>

Clark, W.H.Jr., Babson, E.K., 2012. How benefit corporations are redefining the purpose of business corporations. *William Mitchell Law Rev* 38, 817–850.

Clube, R.K.M., Tennant, M., 2020. The Circular Economy and human needs satisfaction: Promising the radical, delivering the familiar. *Ecological Economics* 177, 106772. <https://doi.org/10.1016/j.ecolecon.2020.106772>

Connell, J.P., Kubisch, A.C., 1998. Applying a Theory of Change Approach to the Evaluation of Comprehensive Community Initiatives: Progress, Prospects, and Problems, in: Fulbright-Anderson, K., Kubisch, A.C., Connell, J.P. (Eds.), *New Approaches to Evaluating Community Initiatives*. The Aspen Institute, Washington, DC, pp. 1–16.

Cooper, D.J., Morgan, W., 2008. Case Study Research in Accounting. *Accounting Horizons* 22, 159–178. <https://doi.org/10.2308/acch.2008.22.2.159>

D’Adamo, I., Lupi, G., Morone, P., Settembre-Blundo, D., 2022. Towards the circular economy in the fashion industry: the second-hand market as a best practice of sustainable responsibility for businesses and consumers. *Environmental Science and Pollution Research* 29, 46620–46633. <https://doi.org/10.1007/s11356-022-19255-2>

Dainelli, F., Daddi, T., Marrucci, L., 2024. Financial sustainability of circular innovations in SMEs. A case study from the fashion industry in Italy. *J Clean Prod* 451, 142042. <https://doi.org/10.1016/j.jclepro.2024.142042>

- Dale, S., Frost, M., Ison, S., 2023. The theory of change and realistic evaluation applied to the evaluation of a transport intervention: The case of the Nottingham Workplace Parking Levy. *Eval Program Plann* 98, 102282. <https://doi.org/10.1016/j.evalproplan.2023.102282>
- Daou, A., Mallat, C., Chammas, G., Cerantola, N., Kayed, S., Saliba, N.A., 2020. The Ecocanvas as a business model canvas for a circular economy. *J Clean Prod* 258, 120938. <https://doi.org/10.1016/j.jclepro.2020.120938>
- Deckers, J., Duhoux, T., Due, S., 2024. Textile waste management in Europe's circular economy.
- Desore, A., Narula, S.A., 2018. An overview on corporate response towards sustainability issues in textile industry. *Environ Dev Sustain* 20, 1439–1459. <https://doi.org/10.1007/s10668-017-9949-1>
- Dey, P.K., Malesios, C., De, D., Budhwar, P., Chowdhury, S., Cheffi, W., 2020. Circular economy to enhance sustainability of small and medium-sized enterprises. *Bus Strategy Environ* 29, 2145–2169. <https://doi.org/10.1002/bse.2492>
- Dyer, W.G., Wilkins, A.L., 1991. Better Stories, Not Better Constructs, To Generate Better Theory: A Rejoinder to Eisenhardt. *Academy of Management Review* 16, 613–619. <https://doi.org/10.5465/amr.1991.4279492>
- Eisenhardt, K.M., Graebner, M.E., 2007. Theory Building from Cases: Opportunities and Challenges. *The Academy of Management Journal* 50, 25–32.
- Elkington, J., 1998. Partnerships from cannibals with forks: The triple bottom line of 21st-century business. *Environmental Quality Management* 8, 37–51. <https://doi.org/10.1002/tqem.3310080106>
- Fehrer, J.A., Wieland, H., 2021. A systemic logic for circular business models. *J Bus Res* 125, 609–620. <https://doi.org/10.1016/j.jbusres.2020.02.010>
- Fischer, D., Reinermann, J.-L., Guillen Mandujano, G., DesRoches, C.T., Diddi, S., Vergragt, P.J., 2021. Sustainable consumption communication: A review of an emerging field of research. *J Clean Prod* 300, 126880. <https://doi.org/10.1016/j.jclepro.2021.126880>
- Fletcher, K., 2010. Slow Fashion: An Invitation for Systems Change. *Fashion Practice* 2, 259–265. <https://doi.org/10.2752/175693810X12774625387594>

García-Muiña, F., Medina-Salgado, M.S., González-Sánchez, R., Huertas-Valdivia, I., Ferrari, A.M., Settembre-Blundo, D., 2021. Industry 4.0-based dynamic Social Organizational Life Cycle Assessment to target the social circular economy in manufacturing. *J Clean Prod* 327, 129439. <https://doi.org/10.1016/j.jclepro.2021.129439>

Geiger, S.M., Fischer, D., Schrader, U., 2018. Measuring What Matters in Sustainable Consumption: An Integrative Framework for the Selection of Relevant Behaviors. *Sustainable Development* 26, 18–33. <https://doi.org/10.1002/sd.1688>

Geissdoerfer, M., Pieroni, M.P.P., Pigosso, D.C.A., Soufani, K., 2020. Circular business models: A review. *J Clean Prod* 277, 123741. <https://doi.org/10.1016/j.jclepro.2020.123741>

Geissdoerfer, M., Savaget, P., Bocken, N.M.P., Hultink, E.J., 2017. The Circular Economy – A new sustainability paradigm? *J Clean Prod* 143, 757–768. <https://doi.org/10.1016/j.jclepro.2016.12.048>

Ghisellini, P., Cialani, C., Ulgiati, S., 2016. A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. *J Clean Prod* 114, 11–32. <https://doi.org/10.1016/j.jclepro.2015.09.007>

Guibrunet, L., Sanzana Calvet, M., Castán Broto, V., 2017. Flows, system boundaries and the politics of urban metabolism: Waste management in Mexico City and Santiago de Chile. *Geoforum* 85, 353–367. <https://doi.org/10.1016/j.geoforum.2016.10.011>

Halkos, G., Nomikos, S., 2021. Corporate social responsibility: Trends in global reporting initiative standards. *Econ Anal Policy* 69, 106–117. <https://doi.org/10.1016/j.eap.2020.11.008>

Hertwig, R., Grüne-Yanoff, T., 2017. Nudging and Boosting: Steering or Empowering Good Decisions. *Perspectives on Psychological Science* 12, 973–986. <https://doi.org/10.1177/1745691617702496>

Hidalgo-Carvajal, D., Carrasco-Gallego, R., Morales-Alonso, G., 2021. From Goods to Services and from Linear to Circular: The Role of Servitization's Challenges and Drivers in the Shifting Process. *Sustainability* 13, 4539. <https://doi.org/10.3390/su13084539>

Huang, C.-L., Vause, J., Ma, H.-W., Yu, C.-P., 2012. Using material/substance flow analysis to support sustainable development assessment: A literature review and outlook. *Resour Conserv Recycl* 68, 104–116. <https://doi.org/10.1016/j.resconrec.2012.08.012>

Hultberg, E., Pal, R., 2021. Lessons on business model scalability for circular economy in the fashion retail value chain: Towards a conceptual model. *Sustain Prod Consum* 28, 686–698. <https://doi.org/10.1016/j.spc.2021.06.033>

Impact Institute, 2019. The True Price of Jeans.

Kanzari, A., Rasmussen, J., Nehler, H., Ingelsson, F., 2022. How financial performance is addressed in light of the transition to circular business models - A systematic literature review. *J Clean Prod* 376, 134134. <https://doi.org/10.1016/j.jclepro.2022.134134>

Kevin van Langen, S., Vassillo, C., Ghisellini, P., Restaino, D., Passaro, R., Ulgiati, S., 2021. Promoting circular economy transition: A study about perceptions and awareness by different stakeholders groups. *J Clean Prod* 316, 128166. <https://doi.org/10.1016/j.jclepro.2021.128166>

Kirchherr, J., 2021. Towards circular justice: A proposition. *Resour Conserv Recycl* 173, 105712. <https://doi.org/10.1016/j.resconrec.2021.105712>

Kirchherr, J., Reike, D., Hekkert, M., 2017. Conceptualizing the circular economy: An analysis of 114 definitions. *Resour Conserv Recycl* 127, 221–232. <https://doi.org/10.1016/j.resconrec.2017.09.005>

Köksal, D., Strähle, J., Müller, M., Freise, M., 2017. Social Sustainable Supply Chain Management in the Textile and Apparel Industry—A Literature Review. *Sustainability* 9, 100. <https://doi.org/10.3390/su9010100>

Korhonen, J., Honkasalo, A., Seppälä, J., 2018. Circular Economy: The Concept and its Limitations. *Ecological Economics* 143, 37–46. <https://doi.org/10.1016/j.ecolecon.2017.06.041>

Lewandowski, M., 2016. Designing the Business Models for Circular Economy—Towards the Conceptual Framework. *Sustainability* 8, 43. <https://doi.org/10.3390/su8010043>

Llorach-Massana, P., Farreny, R., Oliver-Solà, J., 2015. Are Cradle to Cradle certified products environmentally preferable? Analysis from an LCA approach. *J Clean Prod* 93, 243–250. <https://doi.org/10.1016/j.jclepro.2015.01.032>

Lüdeke-Freund, F., Froese, T., Dembek, K., Rosati, F., Massa, L., 2024. What Makes a Business Model Sustainable? Activities, Design Themes, and Value Functions. *Organ Environ* 10860266241235212. <https://doi.org/10.1177/10860266241235212>

- Margoluis, R., Stem, C., Salafsky, N., Brown, M., 2009. Using conceptual models as a planning and evaluation tool in conservation. *Eval Program Plann* 32, 138–147. <https://doi.org/10.1016/j.evalprogplan.2008.09.007>
- Masi, D., Day, S., Godsell, J., 2017. Supply Chain Configurations in the Circular Economy: A Systematic Literature Review. *Sustainability* 9, 1602. <https://doi.org/10.3390/su9091602>
- Mattos, C.A., Scur, G., Albuquerque, T.L.M., 2022. Evaluation of circular business model: Theory of Change approach. *Eval Program Plann* 92, 102069. <https://doi.org/10.1016/j.evalprogplan.2022.102069>
- Mayne, J., 2017. Theory of Change Analysis: Building Robust Theories of Change. *Canadian Journal of Program Evaluation* 32, 155–173. <https://doi.org/10.3138/cjpe.31122>
- Mayne, J., 2015. Useful Theory of Change Models. *Canadian Journal of Program Evaluation* 30, 119–142. <https://doi.org/10.3138/cjpe.230>
- Merli, R., Preziosi, M., Acampora, A., 2018. How do scholars approach the circular economy? A systematic literature review. *J Clean Prod* 178, 703–722. <https://doi.org/10.1016/j.jclepro.2017.12.112>
- Michellini, L., Grieco, C., Ciulli, F., Di Leo, A., 2020. Uncovering the impact of food sharing platform business models: a theory of change approach. *British Food Journal* 122, 1437–1462. <https://doi.org/10.1108/BFJ-06-2019-0422>
- Mies, A., Gold, S., 2021. Mapping the social dimension of the circular economy. *J Clean Prod* 321, 128960. <https://doi.org/10.1016/j.jclepro.2021.128960>
- Millar, N., McLaughlin, E., Börger, T., 2019. The Circular Economy: Swings and Roundabouts? *Ecological Economics* 158, 11–19. <https://doi.org/10.1016/j.ecolecon.2018.12.012>
- Moreno, M., De los Rios, C., Rowe, Z., Charnley, F., 2016. A Conceptual Framework for Circular Design. *Sustainability* 8, 937. <https://doi.org/10.3390/su8090937>
- Muñoz, P., Cacciotti, G., Cohen, B., 2018. The double-edged sword of purpose-driven behavior in sustainable venturing. *J Bus Ventur* 33, 149–178. <https://doi.org/10.1016/j.jbusvent.2017.12.005>
- Naudé, M., 2011. Sustainable development in companies: Theoretical dream or implementable reality? *Corporate Ownership and Control* 8, 352–364. <https://doi.org/10.22495/cocv8i4c3art4>

Nayak, R., Thang, L.N. Van, Nguyen, T., Gaimster, J., Morris, R., George, M., 2022. Sustainable developments and corporate social responsibility in Vietnamese fashion enterprises. *Journal of Fashion Marketing and Management: An International Journal* 26, 307–327. <https://doi.org/10.1108/JFMM-07-2020-0148>

Niero, M., Olsen, S.I., Laurent, A., 2018. Renewable Energy and Carbon Management in the Cradle-to-Cradle Certification: Limitations and Opportunities. *J Ind Ecol* 22, 760–772. <https://doi.org/10.1111/jiec.12594>

Nigri, G., Del Baldo, M., 2018. Sustainability Reporting and Performance Measurement Systems: How do Small- and Medium-Sized Benefit Corporations Manage Integration? *Sustainability* 10, 4499. <https://doi.org/10.3390/su10124499>

Oliveira Neto, G.C. de, Santos, R.A.R., Pinto, L.F.R., Flausino, F.R., Oliveira, D.E.P. de, Seri, M.N., 2024. Innovative circular practices integrating business model for textile industry. *J Eng Fiber Fabr* 19. <https://doi.org/10.1177/15589250241226481>

Opferkuch, K., Caeiro, S., Salomone, R., Ramos, T.B., 2021. Circular economy in corporate sustainability reporting: A review of organisational approaches. *Bus Strategy Environ* 30, 4015–4036. <https://doi.org/10.1002/bse.2854>

Padilla-Rivera, A., do Carmo, B.B.T., Arcese, G., Merveille, N., 2021. Social circular economy indicators: Selection through fuzzy delphi method. *Sustain Prod Consum* 26, 101–110. <https://doi.org/10.1016/j.spc.2020.09.015>

Peters, G., Li, M., Lenzen, M., 2021. The need to decelerate fast fashion in a hot climate - A global sustainability perspective on the garment industry. *J Clean Prod* 295, 126390. <https://doi.org/10.1016/j.jclepro.2021.126390>

Pitkänen, K., Karppinen, T.K.M., Kautto, P., Pirtonen, H., Salmenperä, H., Savolahti, H., Schubin, E., Myllymaa, T., 2023. How to measure the social sustainability of the circular economy? Developing and piloting social circular economy indicators in Finland. *J Clean Prod* 392, 136238. <https://doi.org/10.1016/J.JCLEPRO.2023.136238>

Puntillo, P., Gulluscio, C., Huisingh, D., Veltri, S., 2021. Reevaluating waste as a resource under a circular economy approach from a system perspective: Findings from a case study. *Bus Strategy Environ* 30, 968–984. <https://doi.org/10.1002/bse.2664>

Qu, S.Q., Dumay, J., 2011. The qualitative research interview. *Qualitative Research in Accounting & Management* 8, 238–264. <https://doi.org/10.1108/11766091111162070>

Robinson, S., 2017. *Social Circular Economy: Opportunities for People Planet and Profit*. Social Circular Economy: London, UK.

Rosa, P., Sassanelli, C., Terzi, S., 2019. Towards Circular Business Models: A systematic literature review on classification frameworks and archetypes. *J Clean Prod* 236, 117696. <https://doi.org/10.1016/j.jclepro.2019.117696>

Rossi, A., Luque-Vílchez, M., 2021. The implementation of sustainability reporting in a small and medium enterprise and the emergence of integrated thinking. *Meditari Accountancy Research* 29, 966–984. <https://doi.org/10.1108/MEDAR-02-2020-0706>

Saha, K., Dey, P.K., Papagiannaki, E., 2021. Implementing circular economy in the textile and clothing industry. *Bus Strategy Environ* 30, 1497–1530. <https://doi.org/10.1002/bse.2670>

Saidani, M., Shevchenko, T., Esfandabadi, Z.S., Ranjbari, M., Mesa, J.A., Yannou, B., Cluzel, F., 2024. The future of circular economy metrics: Expert visions. *Resour Conserv Recycl* 205, 107565. <https://doi.org/10.1016/j.resconrec.2024.107565>

Salmi, A., Kaipia, R., 2022. Implementing circular business models in the textile and clothing industry. *J Clean Prod* 378, 134492. <https://doi.org/10.1016/j.jclepro.2022.134492>

Salvador, R., Barros, M.V., Luz, L.M. da, Piekarski, C.M., de Francisco, A.C., 2020. Circular business models: Current aspects that influence implementation and unaddressed subjects. *J Clean Prod* 250, 119555. <https://doi.org/10.1016/j.jclepro.2019.119555>

Santos, F., Pache, A.-C., Birkholz, C., 2015. Making Hybrids Work: Aligning Business Models and Organizational Design for Social Enterprises. *Calif Manage Rev* 57, 36–58. <https://doi.org/10.1525/cmr.2015.57.3.36>

Scarpellini, S., 2022. Social impacts of a circular business model: An approach from a sustainability accounting and reporting perspective. *Corp Soc Responsib Environ Manag* 29, 646–656. <https://doi.org/10.1002/csr.2226>

- Scarpellini, S., Valero-Gil, J., Moneva, J.M., Andreaus, M., 2020. Environmental management capabilities for a “circular eco-innovation.” *Bus Strategy Environ* 29, 1850–1864. <https://doi.org/10.1002/bse.2472>
- Schroeder, P., Anggraeni, K., Weber, U., 2019. The Relevance of Circular Economy Practices to the Sustainable Development Goals. *J Ind Ecol* 23, 77–95. <https://doi.org/10.1111/jiec.12732>
- Schwandt, T., 2015. *Evaluation foundations revisited: Cultivating a life of the mind for practice*. Stanford University Press.
- Selvefors, A., Renström, S., Whalen, K.A., Fallahi, S., Leivas, M., Nordenö, H., Fransson, A., 2024. User-centered circular value propositions – approaches in practice and research. *Resour Conserv Recycl* 207, 107628. <https://doi.org/10.1016/j.resconrec.2024.107628>
- Shields, J.F., Shelleman, J.M., 2017. A Method to Launch Sustainability Reporting in SMEs: The B Corp Impact Assessment Framework. *Journal of Strategic Innovation and Sustainability* 12. <https://doi.org/10.33423/jsis.v12i2.798>
- Shirvanimoghaddam, K., Motamed, B., Ramakrishna, S., Naebe, M., 2020. Death by waste: Fashion and textile circular economy case. *Science of The Total Environment* 718, 137317. <https://doi.org/10.1016/j.scitotenv.2020.137317>
- Silva, M.E., Ashby, A., Nascimento, C.M., 2023. Social Sustainability in Micro and Small Enterprise Supply Chains: Empirical Insights from the Clothing Industry. *Latin American Business Review* 24, 1–30. <https://doi.org/10.1080/10978526.2021.1992597>
- Solis, M., Huygens, D., Tonini, D., Fruergaard Astrup, T., 2024. Management of textile waste in Europe: An environmental and a socio-economic assessment of current and future scenarios. *Resour Conserv Recycl* 207, 107693. <https://doi.org/10.1016/j.resconrec.2024.107693>
- Souza Piao, R., de Vincenzi, T.B., da Silva, A.L.F., de Oliveira, M.C.C., Vazquez-Brust, D., Monteiro Carvalho, M., 2023. How is the circular economy embracing social inclusion? *J Clean Prod* 411, 137340. <https://doi.org/10.1016/J.JCLEPRO.2023.137340>
- Suárez-Eiroa, B., Fernández, E., Méndez-Martínez, G., Soto-Oñate, D., 2019. Operational principles of circular economy for sustainable development: Linking theory and practice. *J Clean Prod* 214, 952–961. <https://doi.org/10.1016/j.jclepro.2018.12.271>

Susur, E., Engwall, M., 2023. A transitions framework for circular business models. *J Ind Ecol* 27, 19–32. <https://doi.org/10.1111/jiec.13363>

Tanekenov, A., Fitzpatrick, S., Johnsen, S., 2018. Empowerment, Capabilities and Homelessness: The Limitations of Employment-focused Social Enterprises in Addressing Complex Needs. *Housing, Theory and Society* 35, 137–155. <https://doi.org/10.1080/14036096.2017.1290676>

Thorisdottir, T.S., Johannsdottir, L., 2020. Corporate Social Responsibility Influencing Sustainability within the Fashion Industry. A Systematic Review. *Sustainability* 12, 9167. <https://doi.org/10.3390/su12219167>

Todeschini, B.V., Cortimiglia, M.N., Callegaro-de-Menezes, D., Ghezzi, A., 2017. Innovative and sustainable business models in the fashion industry: Entrepreneurial drivers, opportunities, and challenges. *Bus Horiz* 60, 759–770. <https://doi.org/10.1016/j.bushor.2017.07.003>

Ünal, E., Urbinati, A., Chiaroni, D., 2019. Managerial practices for designing circular economy business models. *Journal of Manufacturing Technology Management* 30, 561–589. <https://doi.org/10.1108/JMTM-02-2018-0061>

Vahidzadeh, R., Bertanza, G., Sbaffoni, S., Vaccari, M., 2021. Regional industrial symbiosis: A review based on social network analysis. *J Clean Prod* 280, 124054. <https://doi.org/10.1016/j.jclepro.2020.124054>

Vaivio, J., 2008. Qualitative management accounting research: rationale, pitfalls and potential. *Qualitative Research in Accounting & Management* 5, 64–86. <https://doi.org/10.1108/11766090810856787>

Vanhuyse, F., Fejzić, E., Ddiba, D., Henrysson, M., 2021. The lack of social impact considerations in transitioning towards urban circular economies: a scoping review. *Sustain Cities Soc* 75, 103394. <https://doi.org/10.1016/j.scs.2021.103394>

Voss, C., Tsikriktsis, N., Frohlich, M., 2002. Case research in operations management. *International Journal of Operations & Production Management* 22, 195–219. <https://doi.org/10.1108/01443570210414329>

Walker, A.M., Opferkuch, K., Roos Lindgreen, E., Simboli, A., Vermeulen, W.J.V., Raggi, A., 2021. Assessing the social sustainability of circular economy practices: Industry perspectives from Italy and the Netherlands. *Sustain Prod Consum* 27, 831–844. <https://doi.org/10.1016/j.spc.2021.01.030>

Warde, A., 2015. The Sociology of Consumption: Its Recent Development. *Annu Rev Sociol* 41, 117–134. <https://doi.org/10.1146/annurev-soc-071913-043208>

Yin, R.K., 2018. Case study research and applications. Sage Thousand Oaks, CA.