Leveraging Corporate Social Innovation in Upcycling: Exploring Scalability, Sustainability, and Impact

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Abstract

In the context of sustainable development, the fashion industry must address its significant environmental and social challenges. This thesis explores the transformative potential of Corporate Social Innovation (CSI) in upcycling businesses as a pathway to align profitability with sustainability. The research focuses on understanding how CSI strategies can help upcycling companies overcome operational challenges, scale their impact, and foster social and environmental progress. This exploration is guided by the central research question: “How can upcycling businesses apply Corporate Social Innovation (CSI) principles to foster growth, seize opportunities, and address scalability challenges, transforming into sustainable and profitable enterprises? "Using a qualitative research approach, the study combines interviews with industry practitioners and analysis of secondary data from reports to examine the applications of CSI, opportunities and challenges in scaling upcycling. The findings reveal that upcycling companies employ innovative approaches, such as circular material sourcing, modular production techniques, and consumer education, to create value from waste while advancing inclusivity. However, challenges like material constraints, high production costs, and scalability limitations remain significant barriers. The research concludes that CSI strategies offer a powerful framework for upcycling businesses to navigate these challenges and drive systemic change. By integrating inclusive practices, fostering collaborations, and advocating for supportive policies, these companies can expand their impact while addressing the urgent need for sustainability in the fashion industry. This thesis contributes to the discourse on sustainable business practices, offering actionable insights for upcycling businesses and emphasizing the potential of CSI to redefine resource use and create shared value.

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Resumo

No contexto do desenvolvimento sustentável, a indústria da moda enfrenta desafios ambientais e sociais significativos. Esta dissertação investiga o potencial da Inovação Social Corporativa (CSI) em empresas de upcycling como uma estratégia para alinhar lucratividade com sustentabilidade. O objetivo é entender como as estratégias de CSI podem ajudar esses negócios a superar desafios operacionais, escalar seu impacto e promover avanços sociais e ambientais. A pesquisa é guiada pela pergunta central: "Como as empresas de upcycling podem aplicar os princípios da Inovação Social Corporativa (CSI) para fomentar o crescimento, aproveitar oportunidades e enfrentar desafios de escalabilidade, tornando-se sustentáveis e lucrativas?" Por meio de uma abordagem qualitativa, o estudo combina entrevistas com profissionais do setor e análise de dados secundários para examinar as aplicações da CSI, bem como as oportunidades e barreiras enfrentadas. Os resultados mostram que empresas de upcycling utilizam práticas inovadoras, como uso circular de materiais, produção modular e educação do consumidor, para transformar resíduos em valor e promover inclusão. Contudo, enfrentam desafios como restrições de materiais, altos custos de produção e dificuldades de escalabilidade. A pesquisa conclui que as estratégias de CSI oferecem uma estrutura eficaz para lidar com esses desafios e impulsionar mudanças sistêmicas. Ao integrar práticas inclusivas, promover colaborações e defender políticas de apoio, as empresas de upcycling podem expandir seu impacto e atender à necessidade urgente de sustentabilidade no setor da moda. Esta dissertação oferece insights para práticas empresariais sustentáveis e destaca o papel da CSI na criação de valor compartilhado

Título da Dissertação: Aproveitando a Inovação Social Corporativa no Upcycling: Explorando Escalabilidade, Sustentabilidade e Impacto

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Palavras-chave: Sustentabilidade, Inovação Social Corporativa, Economia Circular, Upcycling, Moda Sustentável, Indústria da Moda, Impacto Social

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List of Abbreviations

AI	Artificial Intelligence
CSI	Corporate Social Innovation
CSR	Corporate Social Responsibility
CSV	Creating Shared Value
EU	European Union
GM	Gioia Method
MLP	Multi-Level Perspective
NGO	Non-governmental organization

1. Introduction

"Every single social and global issue of our day is a business opportunity in disguise," Peter Drucker, renowned management consultant and author, once said. This quote underscores the potential for innovative business ideas to convert societal challenges into opportunities for sustainability, growth and impact. In today's world this perspective is of great importance because global economies are confronted with unprecedented environmental and social crises. Among the most urgent issues are those arising from resource-intensive sectors like fashion, a sector that has made itself synonymous with unsustainable practices. The fashion industry exemplifies the issues that demand urgent and innovative solutions, responsible for nearly 10% of global carbon emissions, extensive water consumption, and a growing waste generation (UNEP, 2019).

In response to these challenges, Corporate Social Innovation (CSI) has evolved as a powerful framework for tackling systemic problems while generating shared value for businesses and society. CSI embeds sustainability into business strategies and offers a way to harmonize environmental protection with economic enterprise. By adopting innovative approaches, businesses can establish themselves as leaders in the expanding market for sustainable initiatives and minimize their impact on the environment. Among the many initiatives that have arisen from CSI ethos, upcycling stands out as a convincing example (Porter & Kramer, 2011).

Upcycling transforms waste materials—textiles, plastics, and other disposed resources—into high-quality products, demonstrating the potential of circular economy concepts in practice. This approach provides a sustainable alternative to traditional linear production models and diverts waste from landfills. Resultantly, upcycling companies play a pioneering role in reshaping the fashion industry, showcasing how waste can be translated into opportunity (Bocken et al., 2016).

1.1 Problem Statement

The upcycling movement faces significant challenges despite its potential. High production costs, material variability, and limited consumer demand hinder expansion within the fashion industry (Singh et al., 2019). Labor-intensive processes and the difficulty of maintaining profitability without sacrificing sustainability exacerbate these barriers (Sung, 2015). Additionally, consumer skepticism regarding the quality and desirability of upcycled products

reflects systemic limitations in an industry prioritizing cost and efficiency over sustainability (Fletcher, 2014).

However, growing consumer demand for ethical and sustainable practices offers an opportunity for upcycling businesses to expand their impact. Leveraging Corporate Social Innovation (CSI) strategies can address operational constraints, enable scalability, and deepen connections with socially conscious consumers (Porter & Kramer, 2011). Success requires navigating these constraints while engaging stakeholders across the value chain to foster awareness and demand for sustainable alternatives (Sung, 2015). Upcycling's transformative potential lies in aligning business practices with the global demand for sustainability, a trend reshaping markets and consumer behavior (Niinimäki et al., 2020).

This thesis explores how upcycling businesses can leverage CSI principles to drive growth, overcome barriers, and evolve into sustainable, profitable models. It critically analyzes current practices, identifies challenges, and develops strategies to mainstream upcycling as a viable business model. By examining innovative practices, partnerships, and technologies, this research contributes to sustainability and systemic change in the fashion industry.

1.2 Research Aims and Objectives

This thesis examines how upcycling businesses can effectively leverage Corporate Social Innovation (CSI) strategies to drive growth, capitalize on opportunities, and overcome barriers to scalability, enabling them to evolve into sustainable and profitable Corporate Social Innovation models with amplified social and environmental impact. By examining existing practices and identifying both barriers and opportunities, the study seeks to develop solutions that support the growth and evolution of upcycling in the fashion industry.

This exploration supports the academic understanding of CSI while offering actionable guidance for the practical advancement of upcycling as a sustainable and impactful business model. By connecting theoretical concepts with industry practices, the thesis aims to provide meaningful insights for upcycling companies and the broader fashion industry.

1.3 Research Questions

The central research question driving this study is: " How can upcycling businesses apply Corporate Social Innovation (CSI) principles to foster growth, seize opportunities, and address scalability challenges, transforming into sustainable and profitable enterprises?" This question is supported by four sub-questions, which collectively address the key dimensions of the study:

1. What are the practical applications of CSI principles in the operations of upcycling businesses?

2. What external factors and opportunities drive the growth and scalability of upcycling businesses?

3. What challenges do upcycling businesses face in balancing economic viability and scalability?

4. What solutions—such as partnerships, technology, or policy frameworks—can address these barriers and enable the growth of upcycling as a mainstream business model?

1.4 Structure of the Thesis

The thesis is divided into four chapters exploring Corporate Social Innovation (CSI) in upcycling. Chapter 1 examines the theoretical foundations of CSI, the upcycling business model, and sustainability in the fashion industry, identifying gaps in existing literature. Chapter 2 outlines the qualitative research methodology, including data collection and analysis techniques used to ensure rigor. Chapter 3 presents the findings, focusing on the applications of CSI in upcycling businesses, opportunities, and challenges to grow to a profitable business model, integrating insights from interviews and literature. Chapter 4 discusses the implications, offering theoretical contributions, practical recommendations, limitations and suggestions for future research. The thesis concludes by emphasizing CSI's transformative role in upcycling, highlighting its potential to address challenges, create opportunities and social and economic value.

2. Literature Review

This review aims to establish a theoretical framework for understanding Corporate Social Innovation, Operating Upcycling Business Models and the opportunities and challenges they face to grow (Singh et al., 2019; Niinimäki et al., 2020).

This review examines frameworks like stakeholder theory, the triple bottom line, and open innovation to explore how CSI principles support upcycling businesses (Freeman, 1984; Elkington, 1997; Chesbrough, 2003). It highlights strategies such as partnerships, sector innovations, and employee initiatives to balance profitability with societal impact (Brinkmann & Berglund, 2022; Dionisio & de Vargas, 2020).

Key challenges include material variability, financial constraints, and consumer perceptions, alongside opportunities like digital transformation, policy support, and evolving consumer behavior (Sung et al., 2020; Abuzeinab et al., 2023). The analysis bridges research gaps by exploring the application of CSI principles in upcycling companies and their role in facilitating the scaling of these businesses into mainstream sustainable models.

2.1 Corporate Social Innovation Theory

CSI was first introduced by Kanter (1999) as an extension of corporate social responsibility beyond traditional borders to explore new business opportunities and models to solve social problems. It is about integrating social and environmental objectives into fundamental business strategies; therefore, Corporate Social Innovation (CSI) broadens on Corporate Social Responsibility (CSR) (Bowen, 1953) while going beyond traditional, frequently charity, approaches. CSR enhances the company's reputation, reacts to external pressure and fulfills philanthropic objectives, often without direct connection to the core business (Carroll, 1991; Canestrino et al., 2015; Michelini & Fiorentino, 2012). On the other hand, Social Innovation focuses exclusively on creating social value, independent of corporate profitability (Dionisio & de Vargas, 2020). Corporate Social Innovation bridges these concepts. This change turns CSI from a special project to an essential part of company operations, enabling companies to solve societal issues and produce financial results (Herrera, 2015; Mirvis & Googins, 2018). Prior studies highlight the significance of addressing social consequences while simultaneously creating sustainable economic value for the company (Alonso-Martínez et al., 2019). Consequently, CSI measurs should be treated with the same strategic priority as other profit-oriented innovation projects, guaranteeing equal access to company resources (Mirvis et al., 2016; Jayakumar, 2017; Dionisio & de Vargas, 2020). In this way, CSI is a forward-thinking strategy that has developed to include different aspects of creating social value, such as hybrid business models that combine social and commercial goals from the start (Austin & Leonard, 2008; Lee & Jay, 2015).

By innovating in ways that benefit society and shareholders, CSI positions businesses to create "shared value" (Porter & Kramer, 2011). This perspective is in alignment with the idea of Creating Shared Value (CSV), but CSI goes one step further by combining partnerships with external organizations, like governments and non-governmental organizations, and cross-functional cooperation within businesses to provide complementary expertise and perspective and develop long-term solutions to social issues (de los Reyes, Scholz, & Smith, 2017). Thus, engaging diverse stakeholders enhances innovation capabilities (Paunescu,

2014). Joint efforts promote innovation, open access to new markets and consumers, and increase economic profitability (Alonso-Martínez et al., 2019). Engaging internal and external stakeholders helps to meet with societal expectations, strengthens relationships with partners and communities (Dionisio & de Vargas, 2020), and finally drive the stakeholder acceptance which is important for CSI success (Herrera, 2015). CSI provides an advanced framework that enables businesses to meet and adjust to societal demands as well as shareholder expectations by fusing social innovation with corporate strategy (Sung et al., 2017a, b).

Current research emphasizes CSI's function in addressing urgent issues like resource scarcity and social inequality, particularly in sectors like fashion that are subject to increased criticism. Companies are encouraged by CSI to seek solutions that enhance their competitive edge and benefit society at the same time. In addition to supporting long-term sustainability objectives, CSI cultivates an internal culture that places a high value on social impact and corporate responsibility through creative partnerships and strategies (Hart & Milstein, 2003; Herrera, 2015).

Building on the foundations of Corporate Social Innovation, theoretical frameworks such as the Triple Bottom Line and Stakeholder Theory provide structured approaches for implementing CSI in businesses (Elkington, 1997; Freeman, 1984).

2.1.1 Frameworks and Theories in CSI

For a good guidance in CSI, the first step is to provide theoretical frameworks, they offer critical insights into how corporations can effectively address societal challenges. These frameworks emphasize stakeholder engagement, systemic change, and the balancing economic and social value creation (Brinkmann & Berglund, 2022).

2.1.1.1 Stakeholder Theory

The stakeholder theory forms the basis of CSI. This theory first emphasizes the significance of involving various interest groups in the innovation progress. Traditional corporate methods prioritize mainly the shareholders and yet CSI realizes the necessity to integrate diverse stakeholders such as governments, NGOs, local communities, and consumers in the decision-making processes. It depends on each individual company to decide which stakeholders are the most important and relevant to integrate. The stakeholders give the company the license to operate. This engagement promotes a greater insight of societal demands and allows the co-creation of innovative responses that fulfill both business goals and social aspirations (Freeman, 1984; Mirvis et al., 2016). Through stakeholder partnerships, companies can create

customized, context-sensitive solutions that deal with systemic issues while establishing trust and legitimacy within the communities they exist and serve (Brinkmann & Berglund, 2022).

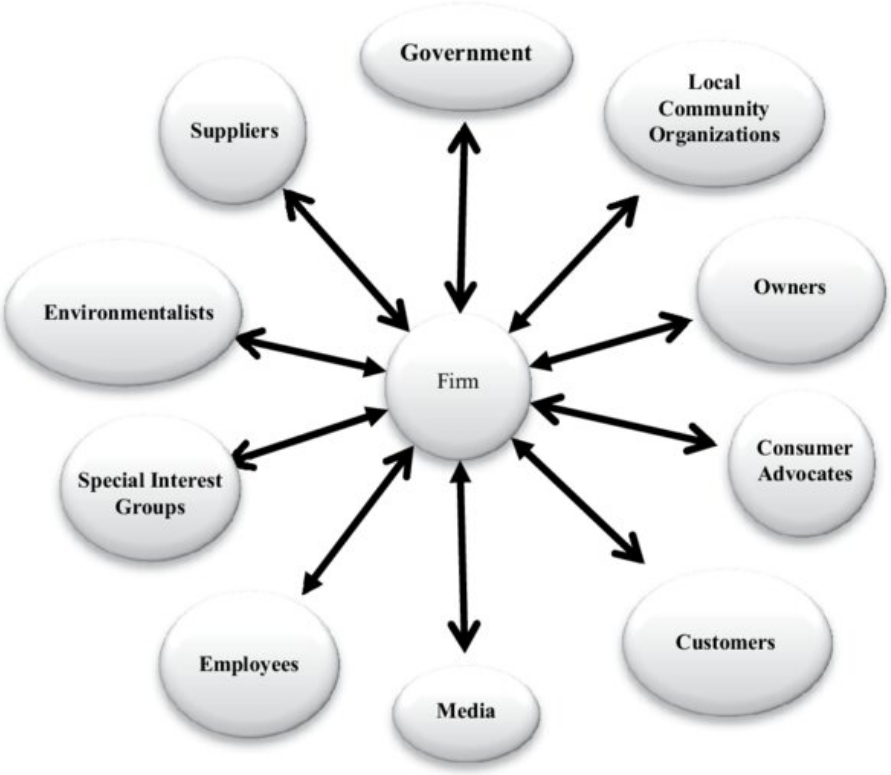

Figure 1: Freeman's model for stakeholders' identification (Freeman, 1984)

2.1.1.2 Triple Bottom Line

The triple bottom line framework reinforces CSI by highlighting the importance of balancing commercial economic as well as environmental and social outcomes. These three "bottom lines" present the dimensions Profit, People and Planet reflecting a broader responsibility. It supports the creation of long-term, sustainable value that embraces social equality and environmental responsibility in addition to financial return. (Elkington, 1997). CSI conforms with this approach by encouraging innovations that target urgent social and environmental problems while maintaining business rentability. For instance, businesses that implement circular economy practices embed sustainability into their business strategy and thereby minimizing waste and fostering ecological resilience (Dionisio & de Vargas, 2020).

Figure 2: Triple Bottom Line concept. (Rao et al., 2018)

2.1.1.3 Open Innovation Model

Another framework called open innovation plays a key part in CSI as it promotes cross-sectoral cooperation and the bundling of different resources and knowledge. There are closed innovation models that are based exclusively on internal skills and abilities, therefore open innovation involves external stakeholders—such as NGOs, universities and community groups into the innovation journey. This cooperative model allows companies to take new perspectives, technologies, and expertise to effectively deal with complex societal issues. By adopting open innovation, businesses can also enhance their capacity to co-develop solutions with external partners, linking business aims with social impact (Chesbrough, 2003; Herrera, 2015).

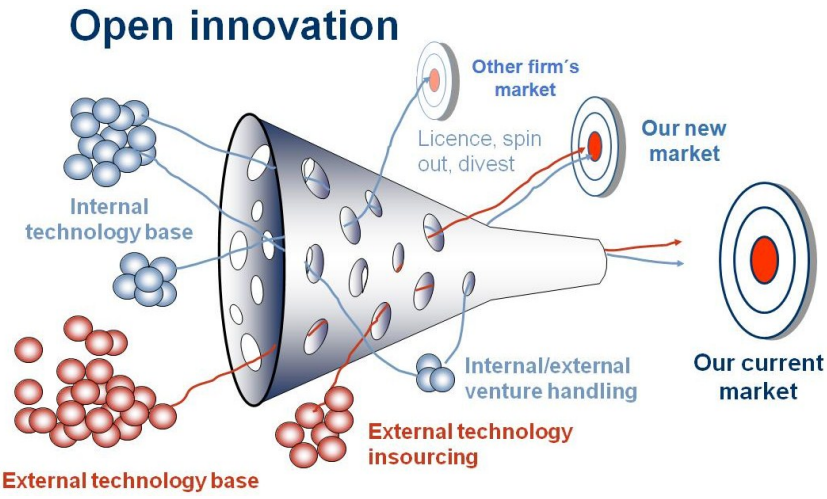

Figure 3: Open Innovation Model inspired by Chesbrough (EOI, n.d.)

2.1.1.4 Multi-Dimensional Innovation

As described above, CSI is characterized by the interaction of several innovation dynamics. Successful projects often combine top-down and bottom-up approaches to maximize impact. The top-down approach embraces strategic leadership that promotes large-scale initiatives, while the bottom-up approach capitalizes the contributions from employees, local communities, and other stakeholders at the grassroots level (Mirvis et al., 2016). In addition, CSI combines inside-out and outside-in approaches. Inside-out innovations originate from internal company resources such as R&D and employee creativity, while outside-in innovations rely on external societal needs, regulatory pressures, and stakeholder input. These dynamics ensure that CSI approaches are both responding to external constraints and in line with internal strategic objectives (Mirvis & Googins, 2018).

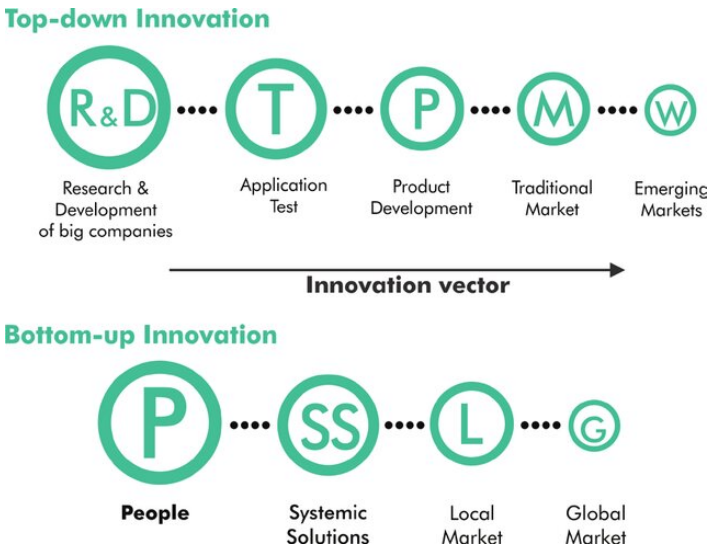

Figure 4: Top-down and Bottom-up innovation (Torres, 2018)

While these frameworks guide strategic planning, their practical implementation reveals variations and challenges across industries, as seen in sustainability-focused innovations (Porter & Kramer, 2011).

2.1.2 Adoption of CSI in Practice

The adoption of Corporate Social Innovation (CSI) principles shows how companies are reshaping strategies to address societal and environmental concerns. Many industries, including fashion, use partnerships, innovations, and employee-driven approaches to integrate social and ecological goals. However, while CSI is widely applied in fashion, its potential in upcycling businesses remains underexplored.

2.1.2.1 Strategic Partnerships

One cornerstone of CSI are strategic partnerships, this includes empowering companies to bundle resources and knowledge with external stakeholders to address urgent global challenges. For instance, joint efforts between businesses and non-governmental organizations have successfully approached problems such as poverty, education, and ecological breakdown. These partnerships highlight mutual value creation through the sharing of expertise, technologies, and building of communities (Brinkmann & Berglund, 2022). Adidas collaborated with Spinnova, a Finnish sustainable textile company, to create the TERREX HS1 hoodie, featuring at least 30% wood-based, recyclable, biodegradable fibers made with minimal water and no harmful chemicals. This aligns with Adidas's goal of reducing plastic pollution and promoting a circular economy (Adidas, 2022). Similarly, Levi Strauss partnered with Renewcell, a Swedish textile recycler, to use Circulose®, a high-quality fiber made from recycled textiles and waste, in their jeans. This upcycling initiative transforms denim waste into premium products, supporting a closed-loop production model and reducing dependence on new cotton (Levi Strauss & Co., 2021).

2.1.2.2 Sectoral Innovations

In various industries, companies have embraced CSI principles by integrating sustainability and responsibility into their core business models. In the fashion industry, as linked to my research companies such as Patagonia and Stella McCartney have pioneered the integration of circular economy concepts and CSI. Patagonia is probably the best-known example, have developed its "Worn Wear" initiative, which promotes consumers to repair, reuse, and recycle their clothing. This program not only decreases environmental footprint but also strengthens consumer loyalty by matching the brand reputation with sustainability metrics (Dionisio & de

Vargas, 2020; Brinkmann & Berglund, 2022). Equally, Stella McCartney has committed to sustainable fashion by eliminating animal-based materials in her collections and promoting biodegradable and reusable fabrics. Just a few years ago, they were still selling jackets and vests with animal pelt, but this was banned in larger stores such as Breuninger in 2021 (Breuninger Tierschutzpolicy, 2021). Stella McCartney is working with innovators in apparel technology to create eco-friendly options and setting industry benchmarks for sustainability. By balancing profitability with sustainability goals, especially bigger companies in the fashion industry with influence and power demonstrate how sectoral innovations can simultaneously drive company growth and promote environmental accountability (Herrera, 2015; Mirvis & Googins, 2018).

2.1.2.3 Employee-Driven CSI

Finally, an important direction of CSI adoption involves employee-driven programs, where companies enable their staff to engage to social and environmental innovation. Many businesses have implemented internal innovation platforms or challenges to empower their workers to develop and pitch ideas to tackle societal issues. Employee-driven programs play an important role in Corporate Social Innovation (CSI) in the fashion industry, enabling companies to address sustainability challenges through internal talent. Through Burberry's intrapreneurship program, workers can pitch ideas that center on decreasing fashion waste or helping underprivileged communities and receive funding and mentorship for impactful ventures resonate with its sustainability aims (Burberry, 2022). Similarly, Adidas's MakerLab fosters workers to experiment with new ways for instance utilizing recycled textiles or 3D printing to reduce waste, with successful innovations being adopted into the company's production lines (Adidas, 2021). H&M's Internal Idea Accelerator promotes opportunities such as upcycling materials or enhancing transparency in the supply chain by testing and scaling successful ways to boost circular fashion practices. These initiatives show how empowering workers can drives sustainability and incorporates CSI into business processes (H&M, 2021).

While these examples demonstrate how major fashion companies effectively implement CSI to drive sustainability and innovation, there remains a notable gap in exploring how CSI principles are interconnected with upcycling practices, particularly among smaller businesses in the upcycling sector.

2.1.3 Challenges in CSI Implementation

Despite its transformative potential, the implementation and realization of Corporate Social Innovation (CSI) is fraught with difficulties. These barriers often arise from the need to balance conflicting stakeholder needs, administer complex partnerships, secure appropriate resources, and build effective measurement scales (Mirvis et al., 2016).

One of the biggest challenges is striking a balance between the drive of social impact with the need for financial profitability. Companies are often caught between the long-term investments they should do for impactful social initiatives but also short-term economic pressures, such as shareholder demands for immediate returns (Mirvis et al., 2016). This is a conflict especially for smaller businesses when the financial benefit is not instantly apparent. It can discourage businesses from allocating the necessary resources to CSI projects. Such as introducing sustainable supply chain practices or upcycling operations can incur significant upfront costs that take an undetermined amount of time to pay off (Herrera, 2015). Support from the leadership plays an important role in solving these tensions. Companies that have a strong and clear commitment to sustainability at the executive level and in their business idea are more likely to deploy their resources efficiently toward CSI initiatives (Dionisio & de Vargas, 2020).

The complexity of partnerships with diverse stakeholders, including governments, NGOs, and community organizations, presents another significant barrier. While these alliances are vital for overcoming complex societal challenges, they often involve mismatched needs, including resource distribution conflicts for the business to balance, and cultural disparities among partners (Brinkmann & Berglund, 2022). For example, businesses may firstly focus on efficiency and scalability, whereas NGOs often prioritize on direct impact at the local level and the active involvement of communities in the development and realization of solutions. It requires a clear communication, trust-building and knowing the importance, expectation and influence from each stakeholder before a company can navigate these different goals. Successful partnerships often rely on setting shared goals and a transparent decision-making process. Finally, maintaining long-term relationships with stakeholders ensures sustained cooperation and synchronization of efforts (Mirvis et al., 2016).

CSI initiatives require financial, human, and technical resources, this can be an important issue for businesses, especially during the early stages of the development. Many companies have problems to allocate sufficient budgets or knowledge to these projects because they must

focus on other important business operations, for instance meeting production targets, improving efficiency, or driving sale. Small and medium-sized enterprises (SMEs) may face even bigger resource limitations compared to larger corporations (Mirvis & Googins, 2018).

A potential solution to this problem could be blended financing models. They combine money from different sources, such as company budgets, government subsidies, foundations, or impact investors and offer a way to address funding and financial problems. For instance, businesses can cooperate with public institutions or NGOs to share expenses and increase the social impact of their projects. In public-private partnerships, governments can pay for large infrastructure projects, like building water purification plants and the businesses take care of the delivery and maintenance of the technology. But managing this mix of funding sources can be challenging and requires clear processes to ensure the funds are used effectively and align with the company's goals (Herrera, 2015).

The most persistent issue is the measurement of the impact of CSI practices due to the lack of standardized metrics. Financial performance is relatively straightforward to measure, while the evaluation of social and environmental outcomes is far more complex. Many companies rely on qualitative indicators, such as community feedback or case studies, but these methods often fail to provide comparable or scalable data (Alonso-Martínez et al., 2019). It is essential to establish strong evaluation frameworks to guarantee that Corporate Social Innovation (CSI) programs promote the desired results. These frameworks should encompass measurable, data-driven metrics next to comprehensive assessments of social and environmental outcomes. For example, a company could pursue quantitative metrics such as the amount of carbon emissions decreased, or the percentage of materials recycled of all materials, or the number of people who benefit from an initiative, such as those having access to clean water or education. At the same time surveys and interviews as, qualitative insights can show how these programs enhance community well-being, change awareness, or improve social justice (Mirvis et al., 2016).

Unilever's Sustainable Living Plan gives clear example: it sets specific targets such as reducing greenhouse gas emissions per product by a set percentage while assessing the health advantages from hygiene initiatives. These frameworks assist businesses in effectively allocating resources, making educational decisions about future investments, and asserting to stakeholders the worth of their programs by combining exact data with more comprehensive social impact evaluations (Unilever, 2010).

Even with these challenges, external pressures like regulations and societal expectations drive businesses toward innovation (Niinimäki et al., 2020).

2.1.4 Key Drivers of Corporate Social Innovation

Corporate Social Innovation (CSI) is increasingly impacted and driven by the urgent societal issues such as poverty, unemployment, environmental devastation, and declining infrastructure. These challenges and the ongoing mistrust of large companies have raised stakeholder expectations for corporate accountability and proactive involvement. Businesses are now illustrating social issues and work with stakeholders to prioritize social impacts (Browne, Nuttall & Stadlen, 2016).

Traditional corporate measures, such as donations and sustainability programs, are no longer sufficient. Leading companies are embracing strategic philanthropy, broad green initiatives, and shared value policies to balance social commitments with corporate goals. These approaches require innovative solutions that extend beyond standard approaches. (Hart & Christensen, 2002; Pfitzer, Bockstette & Stamp, 2013; Kiron et al., 2013).

Overcoming social issues requires innovation beyond conventional frameworks. Organizations shifting above established markets reach underserved networks, often leveraging bottom-up insights and open innovation frameworks to develop proposals for social value (Hart & Christensen, 2002; Kiron et al., 2013).

Cross-sector collaboration is important for sustainable social innovation. Furthermore, Partnerships with NGOs, governments, and social enterprises allow firms to combine resources and expertise to address complex problems. Early collaboration helps to sharpen strategies and promote effective solutions (Kania & Kramer, 2011; Worley & Mirvis, 2013).

Another key driver of CSI is employee engagement. Employees are increasingly looking for meaningful work and opportunities to provide social impact. Businesses are addressing the need by engaging employees in pro bono programs, internal innovation competitions and local projects promoting both employee satisfaction and the innovation. (Cone, 2016).

Lastly, social challenges offer business opportunities. While social innovation does not always bring immediate financial returns, it creates long-term reputational and relational value. Organizations often use hybrid finance and prioritize measurable social impact alongside business outcomes (Browne et al., 2016; Pfitzer et al., 2013).

2.2 Sustainability in the Fashion Industry

To address sustainability, fashion companies are increasingly implementing CSI strategies, especially in response to increasing environmental concerns. The fashion industry produces about 4-5 billion tons of CO_2 annually, accounting for 8–10% of global carbon emissions. With a rate greater than that of the airline and maritime shipping sectors combined, it is positioned as a significant emission (Niinimäki et al., 2020; MDPI). Furthermore, the production of textiles uses a significant amount of water—about 79 trillion liters per year—and industrial wastewater significantly contributes to water pollution worldwide. (Niinimäki et al., 2020). Contributions from Production and the Supply Chain: Over 70% of the emissions from the clothing and footwear sector come from upstream activities, such as the production of raw materials. These contributions are the production of Raw Materials (38% of emissions), Making Yarns (8%). Preparing the Fabric (6%) Wet Procedures (15%) Carbon emissions are produced throughout the fashion supply chain and the remaining emissions come from product use, packaging, transportation, and disposal (McKinsey & Company, 2020).

2.2.1 Circular Economy

The circular economy is increasingly central to corporate strategy in the fashion industry, with upcycling businesses serving as a key practice. Corporate Social Innovation (CSI) should be prioritized to integrate social innovation into core operations, fostering business models that emphasize resource efficiency and waste reduction (Beyer & Arnold, 2022; Pedersen et al., 2016).

According to the Ellen MacArthur Foundation (2013), the circular economy model replaces the conventional linear model of production (take, make, dispose) with a regenerative system that allows products to be recycled, reused, or used for new purposes. The fashion industry has found this framework to be more relevant, particularly as concerns about sustainability are encouraging brands to take on more ecologically friendly practices. By prolonging the lifespan of high-end fashion items, cutting waste, and minimizing the need for new production, resale platforms represent the principles of the circular economy (Geissdoerfer et al., 2017).

2.2.2 The Upcycling Business Model

In response to these ideas, Upcycling has emerged as a key component of the circular economy, emphasizing the transformation of increasing the material's value by turning waste into high-value products (Stahel, 2016). The concept was initially introduced by Reine Pilz, a

German entrepreneur and environmental advocate, in 1994, but it gained broader recognition in 2002 through the publication of “Cradle to Cradle: Remaking the Way We Make Things by William McDonough and Michael Braungart” (Lucietti et al., 2018). Since then, upcycling has gained traction as a promising sustainable practice, known for its ability to reduce waste, cutting energy consumption, and reduce greenhouse gas emissions (Sung, 2017; Wilson, 2016). It contrasts with recycling, which frequently degrades material quality. This makes it attractive to environmentally conscious consumers looking for sustainable and distinctive options (Colombi & D'Itria, 2023; Bocken et al., 2016).

As a relatively new concept, upcycling covers a variety of definitions and processes. It is often characterized as a practice in which high-quality materials are recovered in a closed industrial cycle (Martin & Eklund, 2011; Emgin, 2012). Alternatively, it can refer to the creation or adaptation of products from discarded materials, components, or waste, fostering innovative and creative approaches to repair, reuse, renovation, and recycling within industrial systems (Sung, Cooper & Kettley, 2018). These processes extend the lifecycle of materials and garments, enhancing material efficiency while reducing energy and water consumption and minimizing solid waste production (Allwood, 2011; Sung, 2017). These strategies are also in line with the Circular Economy Action Plan of the European Union, which promotes laws that increase the use of circular textile practices by enlisting stakeholders and building supportive infrastructure (European Commission, 2018).

2.2.3 Consumer Behavior in the upcycling sector

Consumer demand for sustainability is transforming the fashion industry. A 2020 McKinsey & Company survey found that two-thirds of consumers prioritize climate change mitigation, with 88% emphasizing pollution reduction (McKinsey, 2020). This environmental awareness drives preference for sustainable brands, pressuring companies to adopt eco-friendly practices (Brydges & Hanlon, 2020). The interest in sustainable fashion has especially grown among Millennials and Gen Z, who prefer companies aligned with values of transparency and ethical practices (McKinsey & Company, 2020). These groups are willing to pay a premium for responsibly made products (KPMG, 2021; Niinimäki et al., 2020). Social media reinforces these preferences, with younger consumers rejecting "greenwashing" and demanding authenticity (Gazzola et al., 2020).

Especially for upcycling the popularity is fueled by environmental concerns and rising demand, particularly among Generation Z, born between 1995 and 2010 (Francis & Hoefel,

2018). This generation, characterized by digital fluency and individuality, favors sustainable alternatives to traditional consumption (Owen, Napoli & Shin, 2018). Platforms like Depop, where 90% of 15 million users are from Gen Z, showcase their commitment to environmental responsibility and upcycling's profitability (Maguire, 2020). Upcycling resonates with young consumers by combining personalization with sustainability (Wilson, 2016).

Upcycling and secondhand markets attract consumers seeking individuality and sustainability, signaling a shift toward mindful consumption prioritizing quality over quantity (Han, Seo, & Ko, 2017). Perceived social impact and brand transparency further drive mainstream demand for sustainable fashion (Kang, J., & Kim, 2017; Park, H., & Lin, L., 2020). Scaling upcycling requires systemic collaboration and value chain transitions to meet this demand (Geels, 2002).

2.3 Scaling the Upcycling Business Model

Addressing these environmental challenges caused by the fashion industry requires more than incremental technological developments, furthermore it demands a significant systemic shift in production and consumption. Known as a socio-technical transition, this transformation includes interrelated behavioral changes, technology, regulations, funding, and societal perspectives (Elzen, Geels, & Green, 2004; Gardetti & Torres, 2013; Niinimäki & Hassi, 2011; Van den Bosch, 2010). Existing systems are often stabilized by lock-in mechanisms, including grandfathering, sunk investments, and regulatory structures that's why shifts are often complex and long-term (Geels, 2004; Unruh, 2000).

The Multi-Level Perspective (MLP) framework is a widely used tool to analyze socio-technical transitions. Within the MLP, societal dynamics are categorized into three levels: niche, regime, and landscape. The regime represents the dominant norms and systems, such as fast fashion and mass production, which currently dominate the fashion industry. In contrast, niches are spaces where innovative and sustainable practices—such as the upcycling business model—are developed and nurtured. The landscape encompasses broad, long-term societal changes, including global political shifts and demographic transitions, which create the context for transformation (Geels, 2002; Geels & Schot, 2007; Ceschin, 2012).

In transition studies, the concept of scaling up is essential, particularly in the context of niche innovations like upcycling. Scaling up describes the process by which niche practices move into the mainstream or regime level, gaining influence and stability over time. For upcycling, this means transitioning from a small-scale, alternative practice to an industry norm. As sustainable practices such as upcycling gain traction, they contribute to systemic shifts in the

industry, redefining production processes, consumer expectations, and societal standards. This transition transforms upcycling from a niche innovation into a central component of the broader fashion ecosystem (de Haan & Rotmans, 2011; Smith, 2007; Van den Bosch, 2010).

2.3.1 Challenges

Upcycling businesses encounter numerous challenges that hinder their scalability and broader adoption. For sustainable growth and the integration into mainstream fashion markets they must overcome systemic and operational barriers.

2.3.1.1 Material sourcing and supply chain issues

Upcycling businesses are growing in their popularity but despite that they face various systemic and operational challenges that hinder their scalability and wider market adoption. One of the main challenges is to keep sourcing consistent and offer high-quality materials. In contrast to traditional linear manufacturing methods, upcycling commonly depends on irregular, heterogeneous and unpredictable waste streams and it leads to complicated production planning and quality assurance (Singh et al., 2019). Their quality often varies, and many materials are damaged or not suitable. It directly impacts the scalability of upcycling businesses, because it is difficult to maintain in a steady and working supply chain of quality materials (Abuzeinab et al., 2023). Another complexity relies in the storage of materials, especially for small-scale businesses that may not have enough adequate space for the materials and financial resources. (Singh et al., 2019).

2.3.1.2 Financial constraints

An additional obstacle is the lack of good facilities and specialized equipment. They face limitations of expanding operations and handling larger volumes of material because many upcycling companies operate on a small scale with little access to resources (Abuzeinab et al., 2023). The time-intensive character of upcycling is another difficult issue. Labor – intensive processes are in need such as sorting, cleaning, manual disassembly or intricate crafting, but these costs are often not reflected in the final pricing. As a result, upcycled products tend to be more expensive, and this limits their ability to be competitive in price-sensitive markets. Additionally, it is time-consuming to develop the marketing for these unique and often one-off products, as traditional marketing channels might not effectively and successfully target such specialized and niche offerings (Singh et al., 2019).

2.3.1.3 Consumer perception and legal barriers

Consumer perception additional makes these difficulties more complicated. In the opinion of many consumers upcycled products are still in association with lower quality or inferior

durability, deterring broader acceptance. The lack of standardized sizing models narrows the potential customer base (Singh et al., 2019). Moreover, there is no solid and legal framework and standards for upcycling products. This has an impact on trust and market acceptance because without guarantees and regulations consumers and businesses are unsettled (Abuzeinab et al., 2023). In addition, the financial sustainability of these businesses is burdened by high operating costs, including expenses on specialized tools and skilled labor workers. (Singh et al., 2019).

Systemic measures are required to solve these problems, this might include to establish robust material supply networks, educating and raising consumer awareness of the value, quality and uniqueness of upcycled products. Finally, it is also important to lower regulatory burdens and moreover to implement a supportive policy measure that offer financial incentives. (Singh et al., 2019).

2.3.2 Opportunities

While upcycling faces multiple challenges, it also presents significant opportunities for growth and innovation. Upcycling has a real potential to transition from a niche practice to a mainstream and widely used solution. A business can overcome these barriers and leveraging emerging consumer trends and supportive frameworks

2.3.2.1 Emerging consumer demand

Despite the numerous challenges, upcycling businesses operate within a landscape rich with opportunities. One significant advantage is the increasing consumer demand for sustainable and ethical products. This shift, driven by growing environmental awareness, provides a ready market for upcycled goods, particularly among younger, eco-conscious demographics. Consumers are increasingly valuing the uniqueness and creativity associated with upcycled products, viewing them as a sustainable alternative to mass-produced items (Singh et al., 2019).

2.3.2.2 Digital transformation

Digital transformation can also push these opportunities (Sung et. al., 2020). This key opportunity lies in the expansion of digital and e-commerce platforms, which allow upcycling firms to reach broader audiences. Online marketplaces can showcase unique products and educate consumers about the environmental benefits of upcycling. This digital presence not only enhances visibility but also builds a community of like-minded consumers who prioritize sustainability (Singh et al., 2019).

2.3.2.3 Policy support

Policy frameworks promoting circular economy practices further bolster the growth of upcycling businesses. Governments and organizations are beginning to recognize the role of upcycling in reducing waste and conserving resources, leading to supportive initiatives such as grants, subsidies, and reduced taxes for sustainable businesses. These initiatives might help to reduce the financial pressure on upcycling companies and allow investment in better technologies and infrastructure (Singh et al., 2019).

2.3.2.4 Corporate partnerships

Collaborative opportunities also present a major growth avenue. By partnering with larger corporations or other sustainability-focused businesses, upcycling firms can access a stable supply of materials and broaden their market reach. Such partnerships may also lead to co-branding opportunities, enhancing credibility and consumer trust. Additionally, collaborations within the upcycling community can foster knowledge-sharing and innovation, further driving the sector's development (Singh et al., 2019).

2.3.2.5 Shaping consumer behavior

Upcycling businesses have the potential to play a critical role in reshaping consumer behavior and fostering a culture of sustainability. By emphasizing the environmental and social benefits of upcycled products, these companies can drive a shift towards more responsible consumption patterns, aligning with broader global sustainability goals (Singh et al., 2019).

Despite all those opportunities and chances, however, upcycling remains a niche practice and social innovation. The development in the future to Corporate Social Innovation and movement from a niche to a mainstream industry (or scaling-up) could unlock the full potential of upcycling. (Abuzeinab et al., 2023).

2.4 Potential Gap in the Literature

While existing literature explores various aspects of upcycling, such as design principles, consumer behavior, and environmental benefits (Busch, 2008; Fletcher, 2008; Park & Kim, 2014), it lacks a comprehensive examination of how upcycling businesses integrate Corporate Social Innovation (CSI) principles into their operations and scale effectively. The connection between upcycling business models and the broader CSI framework remains underexplored. Critical challenges, including ensuring consistent material quality, achieving financial sustainability, and building consumer trust, are not addressed within a cohesive and holistic framework (Singh et al., 2019; Abuzeinab et al., 2023).

The role of collaborative networks and cross-sector partnerships in scaling up remains underexplored. While partnerships with corporations and governments are acknowledged (Sung et al., 2020), research on their impact in driving upcycling businesses toward CSI integration is limited (Pache et al., 2022). Additionally, the long-term effects of consumer education and behavioral change in mainstreaming upcycling are insufficiently addressed (Hobson & Lynch, 2016). The synergy between upcycling and CSI is often overlooked, leaving a gap in understanding how upcycling businesses can evolve from niche innovations to key players in broader CSI frameworks (Weber et al., 2021). This thesis addresses these gaps by analyzing strategies to overcome scalability challenges and foster CSI, contributing to the sustainable transformation of the fashion industry.

3. Methodology

A well-structured methodological approach is essential to ensure the reliability and validity of findings drawn from both primary and secondary data sources.

3.1 Research Approach

To achieve this objective, a qualitative research methodology was employed, using semi-structured interviews with industry stakeholders. Qualitative research enables a deeper understanding of complex phenomena and is particularly well-suited for exploring emerging topics with limited prior literature (Saunders et al., 2019). This study adopts an inductive approach, which aims to develop new theoretical insights based on the findings from primary data and its comparison with existing literature (Saunders et al., 2009).

Considering the evolving nature of CSI and its specific application within upcycling, and the limited existing literature on the topic, this approach proves essential for uncovering patterns and themes that might remain hidden with purely quantitative methods. By analyzing the perspectives of key industry players, this study seeks to build on existing frameworks and contribute new insights into the interplay between scalability and CSI in the upcycling sector.

This methodology aligns with the study's goal of addressing gaps in the literature by integrating stakeholder insights with established theoretical constructs, thereby contributing to a deeper understanding of how upcycling firms can navigate challenges and enhance their CSI initiatives.

3.2 Sample

To gather insights on overcoming challenges in scaling up upcycling companies and driving Corporate Social Innovation (CSI), this study employed a purposive sampling strategy, a type of non-probability sampling method. Unlike probability sampling, which selects participants randomly to ensure generalizability, non-probability sampling relies on the researcher's judgment to select participants who are particularly knowledgeable and experienced in the study's subject area. This procedure was selected based on the exploratory type of the research and the niche population of upcycling industry experts, who are not widely represented in the general population. Purposive sampling is particularly effective in qualitative research when the aim is to obtain detailed, contextually rich insights rather than broad generalizations (Swanson & Holton, 2005).

Participants were selected based on their experience and active involvement in sustainable fashion, with specific roles across various stages of the upcycling value chain. This dimensional sampling approach ensures diverse perspectives, covering critical stakeholders in the upcycling ecosystem (Robson, 2011). As mentioned in chapter 1 the stakeholder theory is crucial for Corporate Social Innovation. The stakeholder mapping (Figure 1) visually represents the relationships and roles of key stakeholders within the upcycling ecosystem, categorized by their contributions and interactions with upcycling companies. The map highlights how stakeholders such as material suppliers, recycling facilities, policymakers, corporate partners, NGOs, and eco-conscious consumers interact in a value network, with upcycling companies serving as the central node facilitating collaboration, material flow, and impact creation. In addition to their professional roles, interviewees were assessed on their ability to provide detailed responses to the research questions, their accessibility, and their willingness to participate (Saunders et al., 2019).

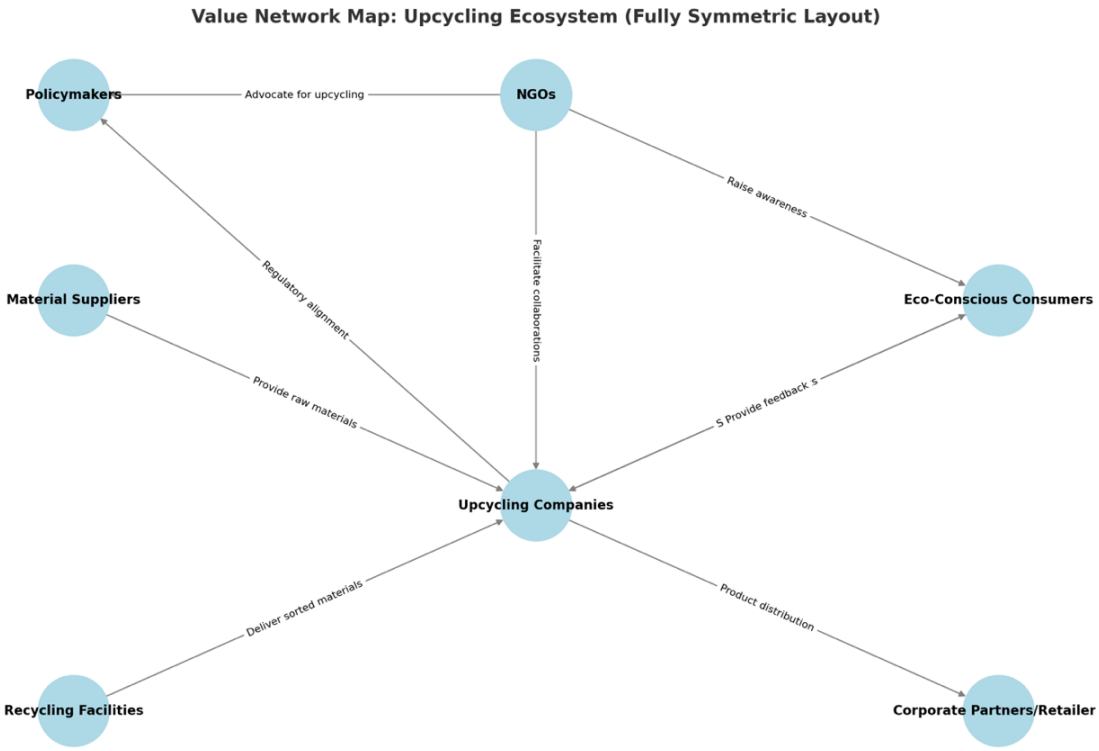

Figure 5: Stakeholder Mapping (my own inspired by Freeman, 1984)

The final sample consisted of practitioners with diverse roles in the upcycling ecosystem, including founders, sustainability managers, and experts in Corporate Social Innovation (CSI). These interviewees represented key stakeholders involved in the upcycling industry, with professional backgrounds spanning business and research and experience levels ranging from 2 to 13 years. The sample primarily focused on business practitioners actively engaged in upcycling processes and strategic decision-making, alongside one academic expert providing a research perspective on CSI. The table below (Table 1) provides an overview of the interviewee profiles. This selection aimed to capture a range of insights into the challenges and opportunities in upcycling, but it is worth noting that the sample does not include perspectives from certain stakeholder groups, such as policymakers or NGOs, which introduces limitations to the scope of the findings.

Interview Partner	**Position**	**Background**	**Experience in years**
1	Co-Founder and CEO	Business	5
2	Founder & CEO	Business	13
3	Founder & CEO	Business	3
4	Co – Founder & CEO	Business	2

5	Sustainability Manager	Business	4
6	Expert CSI	Research	10
7	Impact Manager	Business	5
8	Sustainability Manager	Business	6

Table 1: Interviewee profile

Given the limitation in conducting additional interviews, reports of projects funded by the EU Research & Development projects as well as reports of renowned management consultancies were used as secondary data. The summary of all reports included in this research is presented in the table below.

Type of source	**Source**	**Title**	**Pages**
Consultancy Report	McKinsey & Company & Business of Fashion, 2023	The State of Fashion 2024	128
Consultancy Report	McKinsey & Company & Apparel, Fashion & Luxury Group	Scaling textile recycling in Europe–turning waste into value	42
Consultancy Report	World Economic Forum, Schwab Foundation & Deloitte	The Corporate Social Innovation Compass	11
Technical Paper	SpringerLink	Enhancing Sustainability and Resource Efficiency through Upcycling: A Comprehensive Review	5

Table 2: Secondary data reports

3.3 Data collection and methods

This study employs semi-structured interviews, a flexible method that allows for pre-determined topics while providing the opportunity to explore emerging themes during the conversation (Blandford, 2013). This approach supports a fluid and dynamic investigation, often leading to richer and more nuanced insights (Rubin & Rubin, 2011).

The data collection process is structured into six key stages: (i) defining the information to be gathered; (ii) identifying and contacting relevant industry experts; (iii) conducting interviews;

(iv) collecting and summarizing data; (v) analyzing the data; and (vi) comparing the findings with secondary data sources.

To guide the interviews, a structured script was developed based on insights from the literature review, focusing on challenges and opportunities in scaling up upcycling companies within the sustainable fashion industry. The semi-structured format allowed for a balanced approach—interviews followed a predefined framework but also adapted to explore new, significant themes that arose during discussions. Key areas included sustainability strategies, operational challenges, market dynamics, and the integration of Corporate Social Innovation.

To ensure data accuracy and confidentiality, interviews were audio-recorded with participant consent. Interviews lasted between 30 to 50 minutes. Participants, primarily industry experts and practitioners in sustainable fashion, were identified and contacted through professional networks like LinkedIn. Given the specialized nature of the research topic, four semi-structured interviews were conducted. This primary data was supplemented and cross-referenced with insights from industry reports and relevant academic literature for a comprehensive analysis.

3.4 Data Analysis

The Gioia Method (GM) is a qualitative approach to data analysis that adheres to the rigorous standards of trustworthy research, ensuring both theoretical and empirical rigor (D. A. Gioia, Corley, & Hamilton, 2013; D. Gioia, 2021). This method offers a holistic framework for concept development, effectively balancing the need to inductively generate new concepts with the requirement to meet the high standards of academic rigor expected in leading journals (Gioia et al., 2013).

The GM follows a structured process that begins with organizing data into categories. The first step involves a thorough examination of raw data, including both interview transcripts and secondary data sources. This stage identifies "first-order concepts," where similar quotes and ideas are grouped into non-redundant categories. These categories emerge from identifying commonly used words, phrases, and terms provided by participants and secondary sources, ensuring that the analysis remains grounded in the participants' perspectives and relevant literature. The process emphasizes objectivity, aiming to accurately capture the viewpoints of interviewees and align them with the research questions (Gioia et al., 2013).

The second stage involves identifying "second-order themes," which are more theoretical in nature. Through an iterative process, these themes are developed by synthesizing and abstracting the first-order categories, providing deeper conceptual insights. Finally, the "aggregate dimensions" are derived, which represent the overarching constructs that structure the data. These dimensions are the culmination of the analytical process, providing a comprehensive and high-level abstraction of the findings (Gioia et al., 2013).

The Gioia Method was chosen for this study due to its robust framework for qualitative data analysis. It facilitates the systematic transformation of raw data into meaningful insights while allowing emergent themes to arise organically, ensuring that the analysis remains firmly grounded in the collected evidence (Gioia et al., 2013; Gioia, 2021).

4. Results

This section presents the findings by organizing them into themes derived from the research focus, integrating insights from both primary interview data and secondary sources. Using a qualitative approach, the responses were coded, categorized, and interpreted to align with the research objectives. The Gioia method was used to fulfill the qualitative data, ensuring alignment with the theoretical framework outlined in the Methodology chapter. The findings are structured into three overarching categories: practical. These categories provide a comprehensive analysis of how Corporate Social Innovation (CSI) principles are currently applied in upcycling operations, the factors that present opportunities for growth, and the challenges that hinder scalability. They highlight the potential for upcycling businesses to become sustainable and profitable models of Corporate Social Innovation, leveraging CSI principles to drive growth, seize opportunities, and overcome barriers to scalability.

4.1 Practical applications of CSI

Upcycling companies embody the principles of Corporate Social Innovation (CSI) by embedding sustainability, inclusivity, and creativity into their operations. These businesses tackle environmental challenges while simultaneously fostering social and economic progress. Drawing from interviews and analysis, this section explores the sub-question of the practical applications of CSI principles in the operations of upcycling businesses. Figure 6 below presents the coding framework alongside key data and representative quotations.

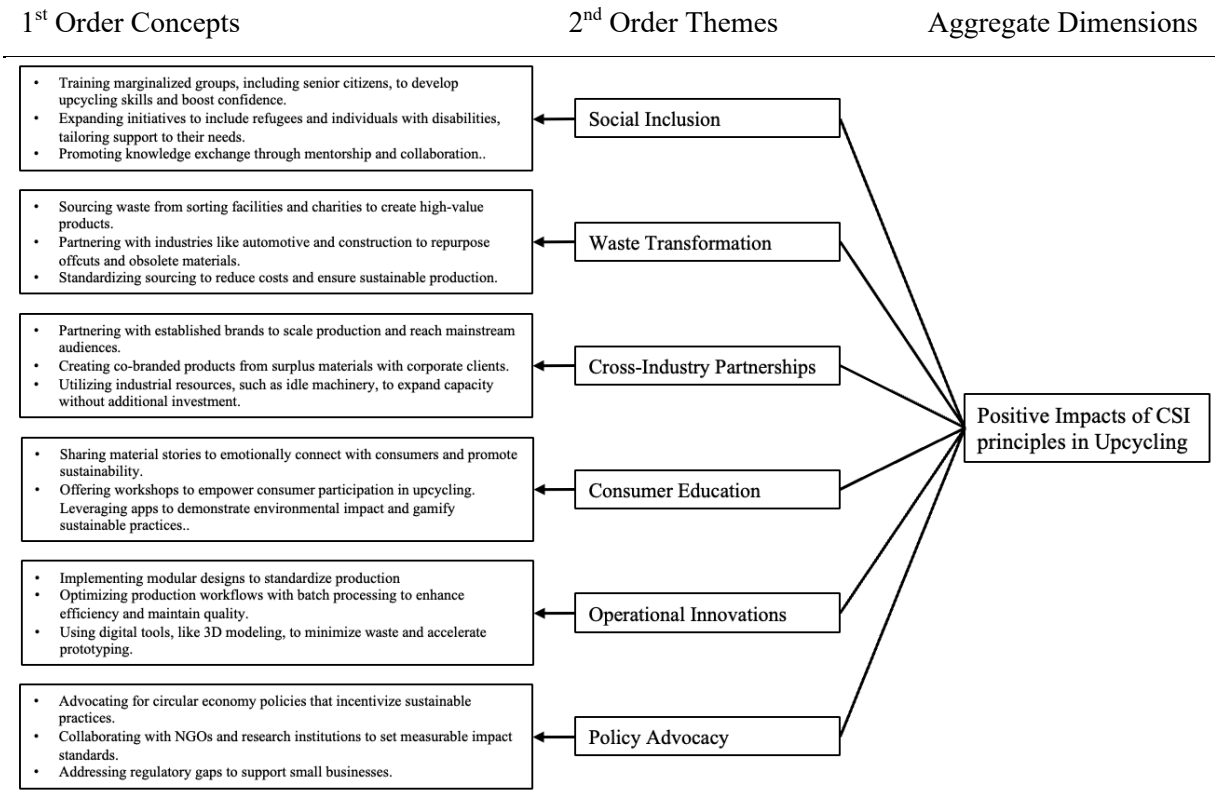

Figure 6: Positive Impacts of CSI principles in Upcycling

4.1.1 Social inclusion and empowerment

Social inclusion is a fundamental aspect of upcycling companies' commitment to CSI because a key principle of CSI is addressing societal challenges and co-create value (Freeman, 1984; Mirvis et al., 2016). One interviewee emphasizes training and employing senior citizens through its "from granny to trendy" program. They described their work with the marginalized communities: *"We train older adults in upcycling techniques, giving them a new purpose and integrating them into a supportive network. They gain confidence, and their craftsmanship inspires a whole new perspective on waste."* (Interviewee 1). As noted in The State of Fashion (2024), upskilling and workforce integration in the textile industry represent critical drivers of sustainable innovation, particularly when targeting underrepresented groups. This approach transforms upcycling into a tool for empowerment, where participants not only contribute to production but also mentor others, fostering intergenerational knowledge exchange.

Looking forward, companies are planning to expand their social initiatives. One participant shared plan to involve refugees and individuals with disabilities in similar programs, adapting training to their unique needs: *"We believe everyone has untapped potential, and upcycling*

offers a way to unlock it while contributing to a sustainable future." (Interviewee 2). These initiatives align with CSI principles, addressing societal challenges through scalable, innovative solutions.

From a scalability perspective, integrating social inclusion into upcycling operations enhances business resilience by fostering a diverse and empowered workforce. *"By involving marginalized groups, we create a skilled team that can handle the complexities of upcycling with care and dedication,"* explained Interviewee 1. Such initiatives resonate with socially conscious consumers and investors, expanding the company's reach. *"Our employees' stories of overcoming challenges and contributing to sustainable fashion deeply connect with our audience,"* shared Interviewee 8.

By aligning operations with CSI principles, social inclusion becomes a strategic advantage. *"Engaging underrepresented groups has allowed us to scale sustainably and remain resilient,"* noted Interviewee 8. These approaches also amplify social impact. As Interviewee 5 emphasized, *"Upcycling isn't just about materials; it's about transforming lives and creating a better future."*

4.1.2 Material sourcing and waste transformation

The practice of sourcing materials from waste streams is central to upcycling companies' sustainability goals and aligns with the Triple Bottom Line framework by integrating environmental responsibility (Elkington, 1997; Dionisio & de Vargas, 2020). One participant explained, *"We work directly with sorting facilities and charities, transforming what's considered 'waste' into high-value fashion pieces. Every item has a story."* (Interviewee 3). This approach reduces environmental impact and creates value from discarded resources.

Companies are also exploring new ways to optimize material sourcing for scalability. One interviewee discussed plans to collaborate with industries outside fashion: *"We've started working with automotive and construction sectors to repurpose offcuts and obsolete materials into durable and unique items. This allows us to diversify while reducing waste from multiple industries."* (Interviewee 4). It also drives the revenue growth: *"Another scale adnvantage is that repurposing these durable offcuts into premium products allows us to enter new markets and boost profitability,"* Such innovative sourcing strategies align with findings from Scaling Textile Recycling (2023), which highlights opportunities to repurpose industrial waste for broader textile applications.

The scalability of these models lies in their opportunity to reduce costs and tap into new markets. *"We source surplus textiles and offcuts at low costs that's why we maintain competitive pricing while preserving healthy margins,"* explained Interviewee 2.

Standardizing material selection and forming reliable supplier partnerships enable consistent production at scale. *"Streamlining our sourcing processes has allowed us to meet larger orders without sacrificing sustainability,"* noted Interviewee 8. These strategies lower operational costs and expand market reach and revenue potential. By broadening their material sourcing they align with CSI principles and can enhance profitability and can scale their operations efficiently and having potential of creating a sustainable and lucrative model.

4.1.2 Cross-Industry Collaborations

Partnerships are a powerful way for upcycling companies to expand their reach and influence. One interviewee shared their experiences with global collaborations: *"Our partnerships with big-name brands have not only helped us scale production but have shown that upcycled products can achieve mainstream appeal without compromising quality."* (Interviewee 5). Another interviewee stated: *"We work with corporate clients like DHL to upcycle their surplus materials into branded products they sell."* (Interviewee 2). "*This allows us to secure consistent material supplies and generate additional income by tapping into their established customer base."*

Cross-industry partnerships provide innovative ways to scale and increase profitability stated in one interview: *"We partnered with a tech company to upcycle old promotional banners into laptop cases, which they distribute as corporate gifts. This expanded our client base, and it allows us to focus on standardized designs and a streamlining production,"* (Interviewee 8). Such partnerships also unlock access to valuable resources. *"Another thing is that with our automotive supplier, we can use their idle cutting machines to process seat fabrics, and this significantly boosts our production capacity and this without requiring additional capital investment,"* shared Interviewee 4.

Future collaborations focus on integrating upcycled materials into larger product ecosystems. For instance, one participant mentioned plans to work with home goods brands to transform textile waste into sustainable furniture components: *"Our goal is to show that upcycling isn't just for fashion—it's a versatile solution for any industry looking to innovate sustainably."* (Interviewee 6). These Partnerships demonstrate the open innovation model,

which leverages external resources and expertise to address complex societal issues and drive systemic change (Chesbrough, 2003; Herrera, 2015).

4.1.3 Educating consumers

Educating consumers is a cornerstone of upcycling companies' strategies and exemplifies the inside-out and outside-in innovation dynamics of CSI, integrating internal resources like employee creativity with external societal needs to drive consumer engagement (Mirvis & Googins, 2018). One interviewee highlighted their storytelling efforts to reach out to the customers: *"Our customers want more than just a product—they want a story. We show them the journey of our materials, from waste to wearable, to help them connect with the idea of sustainability."* (Interviewee 5).

Plans include more interactive educational tools. For example, one company is developing a program where consumers can participate in hands-on upcycling workshops: *"We want to involve our customers directly in the process, giving them the tools to upcycle their own items. This way, sustainability becomes part of their lifestyle, not just a purchase decision."* (Interviewee 5). This approach bridges the gap between awareness and action because it empowers individuals to take ownership of sustainable practices and meanwhile it strengthens brand loyalty.

Other companies have transformed creative digital engagement strategies. *"We've developed an app that lets customers track the environmental impact of their purchases— for example how much water they've saved, how much waste they've diverted from landfills. It gamifies sustainability and keeps customers engaged long after their purchase,"* explained Interviewee 8.

These efforts and practices also align scalability. *"Educating consumers isn't just about awareness—it's about creating demand,"* noted Interviewee 3. *"When customers understand the value of upcycled products, they're more willing to pay a premium, which supports our growth and enables us to scale operations."* These initiatives align with CSI's emphasis on shared value, empowering consumers as active participants in sustainable innovation.

Many upcycling businesses focus on educating consumers as a CSI application, but other participants argue that the product's design and quality should take center stage: *"We don't sell the upcycling story—we sell beautiful, high-quality products that people want to own,"* said Interviewee 7.

This approach emphasizes mainstream appeal over sustainability messaging. *"I see the point of good storytelling especially in sustainable fashion but if a product isn't desirable, it won't sell, no matter how sustainable it is,"* noted Interviewee 2. Another key is prioritizing aesthetics and functionality. With that, companies can reach broader audiences and compete indirectly with non-sustainable alternatives.

4.1.4 Scaling through operational innovation

Operational innovation is essential for scaling upcycling efforts, and companies are adopting creative methods to balance efficiency with customization.

One company has introduced interchangeable design modules for its products. *"We create core designs that can be adapted with different finishes or embellishments, allowing us to standardize production a little bit and offering variety,"* (Interviewee 8). It enables efficient production while catering to diverse consumer preferences. The future of another participant includes adopting modular production techniques to address scalability challenges: *"We're developing a system where upcycled components can be standardized and easily assembled, allowing us to produce at scale without losing the uniqueness of each item."* (Interviewee 6).

Another business employs a batch processing system to optimize workflows. *"We group similar items, like for example denim jackets, and apply consistent techniques for repairs and enhancements. It reduces the production time and ensures quality across each batch,"* explained Interviewee 7.

Additionally, some companies leverage digital design tools to streamline customization. *"We use 3D modeling to plan for example how materials can be cut and combined this can reduce waste and also speeding up the process of building prototypes,"* shared Interviewee 8. This innovation has allowed the company to quickly scale new product lines without compromising on uniqueness. It aligns with the multi-dimensional innovation framework by combining top-down strategies like leadership-driven initiatives with bottom-up contributions from stakeholders and employees to scale operations efficiently (Mirvis et al., 2016).

4.1.5 Advocating for policy change

Upcycling companies are increasingly active in policy advocacy to create a supportive regulatory environment for circular practices, aligning with the stakeholder theory by engaging policymakers, NGOs, and research institutions to co-develop systemic solutions for circular economy practices (Brinkmann & Berglund, 2022).One interviewee described their involvement: *"We're part of several initiatives pushing for policies that incentivize*

sustainable production. It's about creating an industry where practices like upcycling are the norm, not the exception." (Interviewee 4).

Some companies are also working to set industry standards by collaborating with research institutions and NGOs. One participant explained: *"We're contributing to studies on how to measure the environmental and social impact of upcycling. These metrics will help policymakers and consumers see the real value of sustainable practices."* (Interviewee 6). This forward-thinking approach aligns with CSI's focus on systemic innovation and long-term impact.

However, navigating the policy landscape is not without challenges. Many upcycling businesses find compliance with existing regulations burdensome. *"A major issue is the lack of clarity in textile composition labeling laws, which complicates the sourcing of post-consumer waste and limits scalability,"* noted Interviewee 2. These regulations can inadvertently hinder smaller businesses that lack the resources to navigate complex compliance requirements.

Another critical concern is the gap between policy ambition and practical implementation. *"The EU Green Deal and Circular Economy Action Plan are great in theory, but the infrastructure and support needed to make these policies work for small businesses like ours are still lacking,"* highlighted Interviewee 5. This discrepancy often leaves upcycling companies struggling to balance compliance costs with sustainable innovation. It is important that policy advocacy prioritize accessible frameworks for small businesses.

4.2 Opportunities and key benefits

The growth of upcycling businesses is driven by a combination of shifting consumer preferences, industry dynamics, and technological advancements, which collectively create a fertile environment for these companies to thrive and expand. This section explores the sub-question which highlights the key drivers or opportunities of the growth of upcycling businesses. The corresponding data and coding framework, along with illustrative quotations, are presented in Figure 7 below.

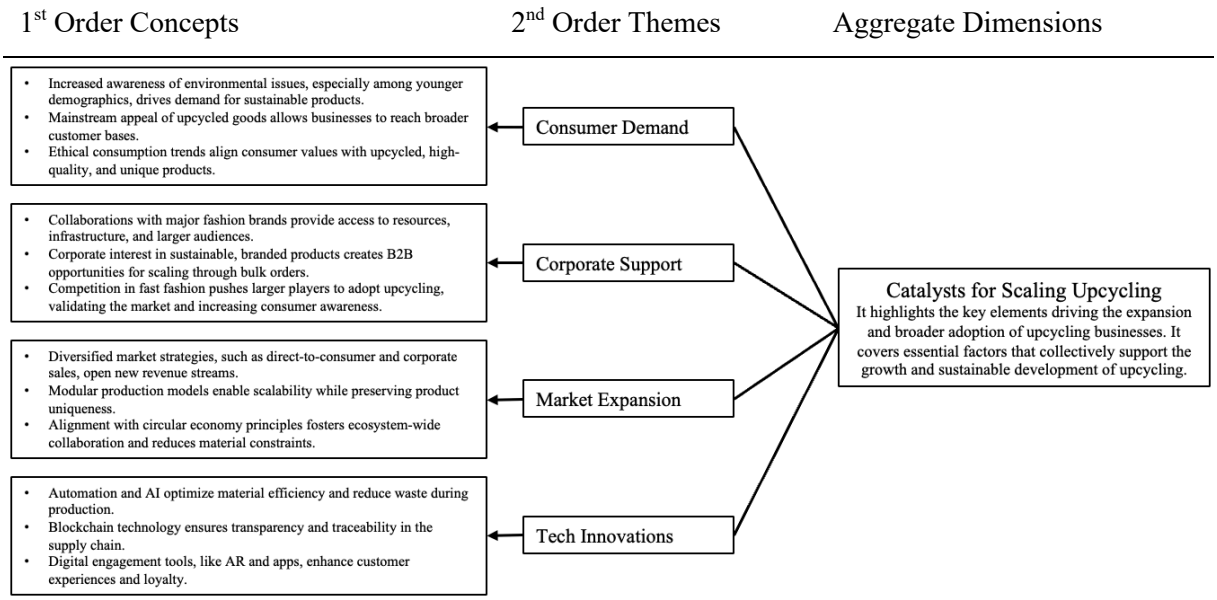

Figure 7: Catalysts for Scaling Upcycling

4.2.1 Growing consumer demand

A heightened awareness of environmental challenges is driving consumer demand for sustainable products. This shift is particularly pronounced among younger demographics who prioritize ethical consumption: *"Consumers increasingly want their purchases to align with their values. Upcycling offers a way to meet these expectations while providing unique, high-quality products,"* (Interviewee 5). *"The demand for sustainable products is no longer niche—it's becoming mainstream,"* explained Interviewee 4. *"Consumers are waking up to the environmental impact of fast fashion, and upcycling offers a tangible way to be part of the solution."*

This growing demand for sustainability extends beyond niche markets. Upcycled products, once considered a small-scale movement, are now finding mainstream appeal. This shift enables upcycling businesses to expand their reach and tap into a broader customer base.

4.2.2 Catalyzing growth through larger companies

The involvement of large fashion companies in upcycling practices creates significant opportunities for smaller businesses. *"Big brands are starting to explore upcycling because their customers are demanding more sustainable practices. This has opened doors for collaborations that wouldn't have been possible before,"* noted Interviewee 3.

The shift toward ethical and sustainable consumption is opening new opportunities. *"We're seeing more interest from corporate clients who want sustainable, branded products for their customers, like bags made from surplus materials,"* shared Interviewee 2. These B2B opportunities enable upcycling companies to scale efficiently by targeting bulk orders.

These partnerships provide smaller businesses access to resources, infrastructure, and audiences they might not reach on their own. *"When we collaborate with larger brands, it amplifies our impact. They provide visibility and scale, while we bring the innovation and craftsmanship of upcycling,"* shared Interviewee 1. The integration of upcycling by fast fashion brands also helps legitimize and popularize the practice, normalizing it for a wider audience.

Ironically, competition within the fast fashion industry is pushing major players to adopt more sustainable practices, including upcycling. As brands seek to improve their environmental credentials, they are turning to upcycling as a solution. *"Fast fashion companies adopting upcycling models might seem like competition, but it's actually validating the market. It brings more attention to sustainable fashion and helps grow the entire ecosystem,"* said Interviewee 4.

This competitive shift benefits smaller upcycling companies by elevating the practice's visibility and acceptance. It also increases consumer awareness, making them more likely to explore smaller, niche brands specializing in authentic upcycling.

4.2.3 Market expansion

The unique nature of upcycling presents both opportunities and challenges for scaling operations. One interviewee emphasized the dual approach their company takes: *"We've developed two models—one for direct-to-consumer sales and another for corporate clients. This diversification allows us to reach different markets while staying true to our upcycling principles."* (Interviewee 1). Such approaches reflect recommendations from *The State of Fashion (2024)*, which highlights how diversified market strategies enhance scalability.

Scaling up requires adaptability, as upcycling often involves limited materials. Another interviewee shared: *"We've started working on modular designs where components can be standardized for larger production runs. This helps us meet demand without losing the uniqueness of our pieces."* (Interviewee 2).

The broader shift toward circular fashion practices is another driver of growth. Many stakeholders in the industry, including manufacturers and retailers, are aligning their operations with circular economy principles, creating a supportive ecosystem for upcycling businesses.

"Suppliers are increasingly offering deadstock and surplus materials, which was much harder to find a few years ago," explained Interviewee 8. This trend reduces the material constraints that often limit upcycling businesses and encourages collaboration across the supply chain.

Moreover, the exclusivity of upcycled goods appeals to a premium market segment. *"Our limited-edition collections, made from high-quality surplus fabrics, attract customers looking for unique, one-of-a-kind products,"* explained Interviewee 8. This positioning allows businesses to charge premium prices and build strong margins despite higher production costs.

4.2.4 Technological advancements

Technological innovations are significantly lowering barriers for smaller sustainable fashion companies, enabling them to scale their operations and enhance customer engagement more effectively. These advancements span production, resource management, and digital interaction, offering transformative benefits for the upcycling sector.

In production, automated cutting systems and AI-powered sorting tools are optimizing material efficiency: *"With automated systems, we can process fabrics more quickly and reduce waste at the same time. This optimizes our use of irregular materials,"* explained Interviewee 7. Technologies like 3D printing also offer new avenues for customization and scalability by allowing designers to create intricate, sustainable components directly from recycled materials.

Digital tools have also enabled upcycling businesses to better manage resources and improve transparency. *"We use inventory management software to track and categorize surplus fabrics, ensuring we maximize every resource while maintaining consistent quality,"* shared Interviewee 8. Blockchain technology is also emerging as a key enabler, providing traceability for upcycled materials. *"Blockchain allows us to authenticate our supply chain and give customers full visibility into the origins of their garments,"* noted Interviewee 6.

On the consumer side, digital engagement tools like apps and augmented reality (AR) enhance the shopping experience. *"Our app lets customers visualize the environmental impact of their purchase and offers tips for extending the life of their clothing,"* explained Interviewee 8. AR-based virtual fitting rooms are also gaining traction, reducing the need for physical samples and returns, which further aligns with sustainable practices.

These technological advancements support smaller upcycling businesses in streamlining their operations and enable them to compete with larger brands by delivering unique, tech-driven customer experiences. By leveraging these tools, upcycling companies can scale efficiently while maintaining their commitment to sustainability.

4.3 Challenges and Barriers

While upcycling companies demonstrate remarkable innovation and impact, they also face significant challenges in their operations. These are analyzed through interviews and literature. In addition to these representative quotations, the corresponding data and the coding structure are shown in Figure 4

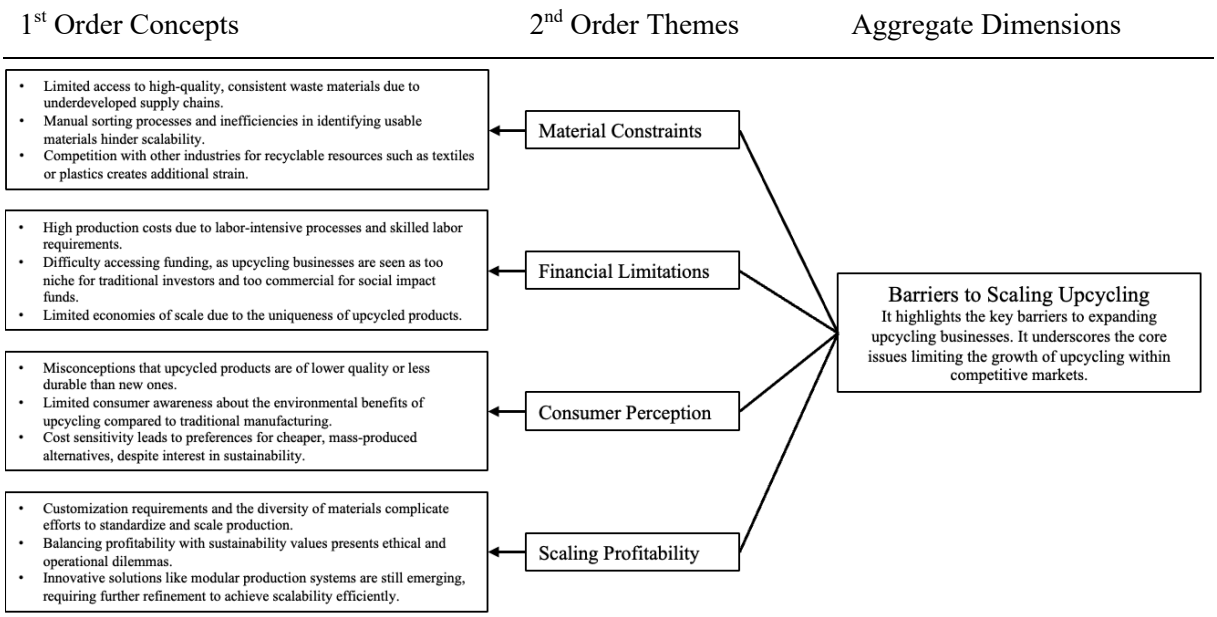

Figure 8: Barriers to Scaling Upcycling

4.3.1 Material constraints

The literature frequently highlights material constraints as a significant hurdle for upcycling businesses, particularly in sourcing consistent, high-quality inputs. However, some interview participants, especially smaller companies challenged this notion. *"The problem isn't the lack of materials—it's a lack of imagination and infrastructure to identify and process them. There's more than enough waste to work with if you know where to look,"* argued one participant (Interviewee 1).

Another interviewee echoed this sentiment: *"Sorting facilities are overflowing with textiles, but the industry often overlooks their potential. Our biggest challenge isn't availability; it's making sure we find the right materials and handle them efficiently."* (Interviewee 3). This

aligns with Scaling Textile Recycling (McKinsey & Company, 2023), which identifies processing infrastructure as the primary bottleneck for upcycled materials.

Despite these insights, the manual nature of sorting and sourcing remains a limitation for smaller businesses. One participant admitted: *"We rely on surplus textiles that are often limited in their quantity. Finding specific materials for niche designs can be time-intensive and laborious, especially when we need high-quality inputs in limited quantities."* (Interviewee 5).

4.3.2 High costs of upcycling

The cost of upcycling is significantly higher than traditional manufacturing due to labor-intensive processes and the unique nature of the materials used. One participant explained: *"Upcycling takes more effort than using virgin materials. Every piece is unique, which requires customization at every stage—design, production, and even marketing."* (Interviewee 4).

Additionally, the need for skilled labor and specialized equipment adds to the cost. As one interviewee noted: *"We invest in training artisans, purchasing tools and technology that can handle unconventional materials, but it's a long-term expense that many small businesses can't afford."* (Interviewee 6).

This cost challenge is compounded by the lack of economies of scale. *"Traditional fashion benefits from mass production, but with upcycling, every item is one-of-a-kind. That's a strength, but it also means we can't bring costs down as easily as larger players,"* shared another participant (Interviewee 2).

4.3.3 Consumer awareness

Consumer perception remains a barrier for upcycling businesses. While sustainability has gained traction, misconceptions about upcycled products persist. One participant observed: *"Many consumers think upcycled products are second-rate because they're made from waste. Educating them about the quality and creativity behind our work is an uphill battle."* (Interviewee 3). As noted in The Corporate Social Innovation Compass (World Economic Forum, 2020), the 'attitude-behavior gap' remains a key challenge, with consumers often prioritizing cost and convenience over sustainability principles.

The "attitude-behavior gap," where consumers express interest in sustainability but fail to translate it into purchases, further complicates matters. *"People like the idea of upcycling, but*

when faced with cheaper, mass-produced alternatives, they often choose price over principles," explained one interviewee (Interviewee 1).

To counter this, some companies focus on storytelling and transparency. *"We highlight the craftsmanship and environmental savings behind every product, but changing consumer mindsets takes time,"* shared another participant (Interviewee 2).

4.3.4 Scalability and profitability

Scaling up is one of the most difficult issues for upcycling businesses. The uniqueness of upcycled products, often celebrated as a strength, limits scalability. *"We create one-of-a-kind pieces, but that makes it hard to replicate processes at scale,"* explained one interviewee (Interviewee 4). Unlike traditional manufacturing, where standardized processes drive efficiency, upcycling requires adaptability to diverse materials and designs, complicating efforts to expand operations.

Profitability is also a persistent concern, especially in niche markets. One participant shared: *"Upcycling is too social for traditional investors and too business-oriented for social impact funds. Finding the right financial support is a constant struggle."* (Interviewee 5). This funding gap forces many businesses to rely on limited resources, constraining their ability to innovate and grow.

Additionally, balancing the need for growth with sustainability goals poses a dilemma. As one interviewee put it: *"We want to scale responsibly, but the pressures of profitability can sometimes push businesses toward compromising their values."* (Interviewee 6).

Innovative solutions, such as modular production systems, are emerging as potential strategies to address these challenges: *"We're developing a so-called Modular Production System where standard pieces of fabric are pre-cut and can be quickly assembled into different designs. This allows us to produce more efficiently while still offering the unique aesthetic that defines upcycled fashion."* (Interviewee 6). This aligns with recommendations in Scaling Textile Recycling (2023), which highlights modular designs as essential for overcoming scalability challenges.

5. Discussion

The findings highlight that upcycling companies effectively implement Corporate Social Innovation (CSI) strategies, creating value by integrating social inclusion, sustainability, and operational innovation. These strategies align with existing theories on CSI while also

offering new insights into the practical applications and challenges faced by upcycling businesses. For example, initiatives such as social inclusion programs demonstrate the power of upcycling to empower marginalized groups. As noted by Interviewee 1, *"We give people a platform to use their skills in ways they never thought possible, making them part of the sustainability movement."* This reflects how CSI principles can bridge social and environmental objectives, aligning well with theoretical frameworks like Kanter's (1999) model of social impact.

Contrary to existing literature (e.g., Singh et al., 2019) that emphasizes material scarcity as a critical limitation, participants in this study challenged this assumption. Several interviewees highlighted the abundance of waste materials but pointed to systemic inefficiencies as the real bottleneck. Interviewee 3 stated, *"There's no shortage of materials. The real challenge lies in building the infrastructure to collect, sort, and transform them efficiently."* This finding shifts the narrative from scarcity to the need for infrastructure and logistics systems. Interviewees frequently pointed to infrastructural inefficiencies, such as the absence of reliable networks for collecting and sorting waste materials, as more significant barriers. This suggests that policy interventions and investments in supply chain infrastructure could have a greater impact on scaling upcycling practices than focusing solely on material availability. This is offering a new perspective on barriers to scaling up upcycling initiatives. However, the literature (Singh et al., 2019) also highlights policy frameworks such as grants and subsidies that aim to support circular economy practices, which many interviewees felt were absent or ineffective in practice. This disconnect suggests a need for more targeted and accessible policy measures tailored to the unique needs of upcycling businesses. Such measures could include building supply chain infrastructure and providing financial incentives for innovative waste processing technologies, as noted in McKinsey & Company's (2023) report on scaling textile recycling.

Operational strategies in upcycling businesses also yield significant benefits, particularly in scalability, resource efficiency, and social and environmental impact. Despite challenges, modular designs emerged as a promising solution for scalability. Interviewee 4 explained, *"We're experimenting with modular systems that allow us to create standardized components while maintaining the uniqueness of the final product."* This aligns with circular economy theories (Geels, 2002) that emphasize operational flexibility and resource optimization.

Resource efficiency emerged as a critical benefit of upcycling businesses, showcasing their ability to repurpose waste streams from various industries to create high-value products. As noted in the findings, upcycling companies maximize the value of discarded materials while minimizing inputs, a practice central to their sustainability goals. However, while cross-industry collaborations, such as those with the automotive sector, have yielded innovative applications—like transforming scraps of leather and tarpaulin into durable fashion items (Interviewee 5)—these efforts also highlight underlying challenges.

For instance, the variability and unpredictability of waste streams can create inefficiencies in sourcing and processing materials, as suggested by other interviewees. *"We're piloting automated sorting systems to address these inefficiencies and ensure a consistent supply of high-quality inputs"* (Interviewee 6). These initiatives demonstrate the dual nature of resource efficiency in upcycling: while partnerships and innovations enable the creative use of diverse materials, they also necessitate technological and strategic investments to mitigate operational complexities. This nuanced perspective aligns with CSI principles, balancing the pursuit of sustainability with the practical challenges of scaling resource-efficient practices. By addressing these barriers, upcycling companies can further enhance their impact and contribute to systemic change within the fashion industry.

Social and environmental impacts further highlight the multifaceted value of upcycling. Companies actively create job opportunities for marginalized groups, emphasizing fair wages and skill development. Interviewee 1 noted, *"Every product we make keeps materials out of the landfill and provides a living wage for someone who might otherwise be overlooked in the job market."* This dual impact aligns with the principles of CSI and supports global sustainability goals (World Economic Forum, 2020).

Nevertheless, the findings also reveal persistent challenges. High production costs remain a significant barrier due to the labor-intensive nature of upcycling, especially for small businesses. As Interviewee 2 observed, *"Every item we make is unique, which means customization at every stage—design, production, and even marketing."* This issue is compounded by the lack of economies of scale, as upcycled products often require more time and effort compared to mass-produced alternatives. One potential solution could involve the development of shared production facilities, where multiple upcycling businesses collaborate to reduce costs while maintaining their unique identities. Additionally, automation of

repetitive tasks, such as material sorting, could improve efficiency without compromising craftsmanship.

The findings also show that consumer behavior both supports and hinders the growth of upcycling businesses, aligning with the "attitude-behavior gap" described in the literature (World Economic Forum, 2020). While sustainability is increasingly valued and demand for upcycled products is growing, misconceptions about these products persist. Interviewee 3 remarked, *"Changing mindsets is tough. People still associate 'recycled' with 'inferior,' even when the product is better than the original."* To address this, robust educational efforts are essential. Upcycling companies could engage consumers through storytelling, workshops, and transparent communication about the production process, building trust and appreciation for their products. Digital tools such as augmented reality (AR) and apps could further enhance consumer engagement, as noted by Interviewee 8: *"Our app lets customers visualize the environmental impact of their purchase and offers tips for extending the life of their clothing."*

Scalability and profitability also remain complex hurdles. Upcycling businesses often face tensions between maintaining their values and meeting the demands of growth. Interviewee 5 described this tension, noting, *"We want to grow, but we don't want to lose what makes us special. Finding investors who understand that balance is a challenge."* Hybrid funding models, combining impact investments with crowdfunding, could provide the necessary financial support while preserving mission-driven objectives.

5.1 Theoretical implications and contributions

This research contributes to CSI literature by challenging the conventional focus on material scarcity as a barrier for upcycling. Instead, it highlights infrastructural inefficiencies as a more significant obstacle, shifting the discussion toward systemic innovations in logistics and material processing. Additionally, the findings underscore the dual impact of upcycling—environmental and social—providing a more holistic view of CSI's potential. Cross-industry partnerships and modular production systems provide practical insights into addressing scalability challenges, aligning with the Multi-Level Perspective (MLP) framework for socio-technical transitions (Geels, 2002).

5.2 Managerial Contributions

From a managerial perspective, this study emphasizes the importance of strategic collaboration and consumer engagement for upcycling businesses. Cross-industry

partnerships, such as sourcing materials from automotive or construction sectors, enable companies to access new streams of waste materials while diversifying their offerings. Additionally, consumer education through workshops, storytelling, and interactive marketing campaigns can help bridge the perception gap and build stronger connections with customers. Exploring cooperative models, such as shared production facilities, could also reduce costs and improve efficiency while maintaining artisanal quality. Modular design approaches, which allow for scalable production without sacrificing product uniqueness, represent another promising strategy for upcycling businesses aiming to expand their reach.

5.3 Limitations

While this research provides valuable insights, it is important to acknowledge its limitations. The relatively small sample size of eight interviews limits the generalizability of the findings. Additionally, the study's qualitative nature, while offering rich and detailed data, may benefit from complementary quantitative research to validate these findings on a broader scale. Another limitation is the potential for interviewer bias, as qualitative data interpretation is inherently subjective despite efforts to ensure objectivity. Additionally, the study's focus on the fashion industry may overlook upcycling's applicability in other sectors, like construction or technology, with distinct dynamics. The research's geographic scope is limited, with findings tied to specific regional contexts that may not apply universally. Additionally, the evolving nature of upcycling and CSI may render some insights outdated as practices and technologies advance. This study relies on self-reported data, which may reflect biases or inaccuracies in participants' accounts. Future research could adopt longitudinal or observational methods for a more objective and comprehensive analysis.

5.4 Recommendations for future research

Future research could further investigate consumer perspectives on upcycled products, focusing on how demographics, cultural contexts, and socioeconomic factors influence purchasing behavior. Longitudinal studies could explore how consumer attitudes toward sustainability evolve over time. Comparative analyses across industries, such as construction and technology, could uncover best practices for scaling and profitability beyond the fashion sector. Technological advancements, including AI-driven sorting, blockchain for supply chain transparency, and automated production, warrant exploration to address infrastructural inefficiencies. Research on policy frameworks, such as subsidies and tax incentives, could assess their role in promoting systemic upcycling. Additionally, studies on cross-sector collaborations could reveal how partnerships among businesses, NGOs, and governments

contribute to scaling upcycling initiatives. Finally, examining the impact of education and digital engagement on consumer behavior could offer insights into effective strategies for promoting upcycled products. These research directions would enhance the understanding of CSI's role in upcycling and support broader industry transformation.

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