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## Circular Economy in the Fashion Industry. Perspectives on a Swiss Fashion Company

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**Abstract**

The textile and fashion industry are significant contributors to environmental degradation, accounting for approximately 20% of global water pollution, as well as substantial carbon emissions. The rapid expansion of fast fashion has intensified environmental issues by reinforcing a linear consumption model. In response, the adoption of circular economy strategies has emerged as a critical approach to reduce reliance on virgin resources and mitigate environmental effects. This study examines the implementation of circular strategies using NIKIN, a Swiss fashion company, as a case study. The research aimed to investigate how sustainability and profitability can be balanced, how supply chains can adapt to circular models, and the role of consumer behavior in facilitating this transition. A mixed-method approach combining a literature review and case analysis was used to explore these questions. The findings reveal that a circular cashback model, supported by innovative biodegradable materials, offers a viable strategy for achieving circularity in fashion. The strategy integrates recycling with financial incentives, attracting diverse consumer groups while reducing environmental impact. The early market introduction provides competitive advantages, yet significant challenges remain. These include designing products for recyclability, overcoming material properties that complicate manufacturing, addressing high process costs, managing emissions from logistics, and resolving legal uncertainties. Additionally, limited infrastructure for material production and recycling exacerbates these challenges.

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## 1. Introduction

The textile industry is one of the largest contributors to environmental degradation worldwide. Its impact extends across several critical dimensions, including water pollution, carbon emissions, waste generation, and resource overuse. These challenges are further exacerbated by the rise of fast fashion, a trend that has significantly shortened the use phase of clothing. In this system, garments move rapidly from production to disposal, often after only a few uses. This accelerated cycle has led to an alarming increase in textile waste and environmental harm (Appolloni et al., 2023; Chen et al., 2021; Muthu, 2017).

A significant portion of the life cycle of textiles currently follows a linear structure. In this model, resources are extracted, processed, used, and ultimately discarded, with minimal regard for reuse or recycling. This linear approach is not only resource-intensive but also contributes to a mounting waste crisis (Niinimäki et al., 2020). The environmental implications are staggering, with textiles being a major source (20%) of water contamination due to the chemicals used in dyeing and finishing processes, as well as a contributor to global carbon emissions through energy-intensive production and transportation (Chen et al., 2021).

However, there is growing evidence that the implementation of circular strategies within the textile industry can mitigate these issues. Circular strategies aim to create a closed-loop system where materials are reused, recycled, and repurposed, thereby minimizing waste and reducing the reliance on virgin resources (Stewart & Niero, 2018). Various studies highlight how adopting such approaches can lead to significant reductions in environmental pollution. For example, recycling fibers, improving product durability, and designing garments for disassembly can all contribute to a more sustainable textile ecosystem (Moorhouse & Moorhouse, 2017). Furthermore, circular strategies are not just environmentally beneficial; they also present economic opportunities (Chen et al., 2021). By extending the life cycle of products and creating new markets for recycled materials, businesses can achieve cost savings and tap into the growing consumer demand for sustainable products.

Globally, the fashion industry is undergoing a transformation, driven by increasing environmental challenges and growing consumer demand for sustainable practices (Castro-Lopez, 2021; Rajkishore, 2019). In this transforming climate the Triple bottom line theory suggest an interesting way of producing while maintaining focus on balancing the environmental, social and economic aspects of a business strategies (Farooq et al., 2021). As the textile industry lags behind other sectors in implementing circular economy principles, adopting systematic tracking models is essential for progress. It can be tracked with the models such as 3DCE (Ellram et al, C.R. 2007) which structures and analyses the sustainable practices within a clear operational framework. The theory of Drivers and barriers influencing the adoption of circular economy identifies key enablers and obstacles at internal, external, and market levels, offering insights into the capacity of textile companies to transition toward circularity (Farrukh, 2024 et al ; Kwan et al., 2024).

Circular economy strategies are recognized as key to sustainable fashion, nevertheless, research on their practical implementation remains scarce. Existing studies focus on theory or large-scale industry trends but overlook operational challenges at the company level. This paper fills this gap by analyzing NIKIN's circular cashback model, highlighting key challenges such as material selection, production, logistics, and consumer engagement. It uniquely demonstrates how financial incentives can drive circularity while maintaining economic feasibility.

A single case study is used to investigate and explore new strategies to transform business from a linear to a circular business model. Hunziker & Blankenagel (2024) recommend single case studies to understand real phenomena holistically and to develop an understanding for root causes in a dedicated context. Thus, using the case of a Swiss fashion company, NIKIN, is used to explore the practicalities of implementing a circular strategy. NIKIN has gained recognition for its innovative approach to sustainability, such as using eco-friendly materials and supporting reforestation initiatives by planting a tree for every product sold (NIKIN AG, 2025c). By examining its operations, this paper aims to shed light on where the opportunities and challenges lie in transitioning from a linear to a circular model. Key questions include how businesses can balance sustainability goals with profitability, how supply chain structures need to evolve, and what role consumers play in supporting circular practices.

While this study focuses on NIKIN's circular cashback model in Switzerland, its findings are relevant to the global fashion industry. While this study focuses on NIKIN's circular cashback model in Switzerland, its findings are relevant to the global fashion industry. The European Union's *Strategy for Sustainable and Circular Textiles* (Europäische Kommission 2022) highlights the legal need for transition. By situating NIKIN's case within a

global context, this study emphasizes the importance of policy support, cross-industry collaboration, and scalable recycling innovations to accelerate circularity in fashion worldwide.

The case study aims to provide insights into the broader implications of circular strategies in the textile industry. The lessons learned can serve as a valuable blueprint for other companies. All primary data was gained during a semi-structured interview with the CEO of NIKIN in January 2025 or are based on publicly available information. The interview explores how Nikin integrates environmental values into its business model and navigates the challenges of sustainability in the fashion industry.

A mixed-method approach is used, combining literature research and a case analysis through an expert interview. The collected data is analyzed using a comparative approach, contrasting the findings from the literature review with insights from the expert interview. This research relies on primary data as a single interview for the case analysis and secondary sources for the literature review.

## 2. Theoretical framework

The fashion industry is at the center of global discussions on sustainability, driven by its extensive environmental footprint and resource-intensive practices. Therefore, environmental impact, sustainable consumption, and circular strategies are essential to orchestrate the transformation toward a more sustainable fashion industry.

### 2.1 The Environmental Impact of the Textile Industry

The textile industry is a major contributor to global environmental degradation (Chen et al., 2021). Water pollution is one of the most pressing environmental issues linked to textile manufacturing. Especially concerned are cotton and wool. The dyeing and finishing processes alone account for about 20% of global industrial water pollution (Niinimäki et al., 2020). These processes often release untreated wastewater containing hazardous chemicals such as heavy metals leading to the contamination of aquatic ecosystems and drinking water sources (Chen et al., 2021; Niinimäki et al., 2020). About 35% of oceanic primary microplastic pollution stems from textile industry (Beverley et al., 2018; Niinimäki et al., 2020). Additionally, the cultivation of cotton demands vast quantities of water. For instance, the production of a single cotton T-Shirt requires approx. 2'700 liters of water, which often increases water scarcity in already arid regions (Chen et al., 2021).

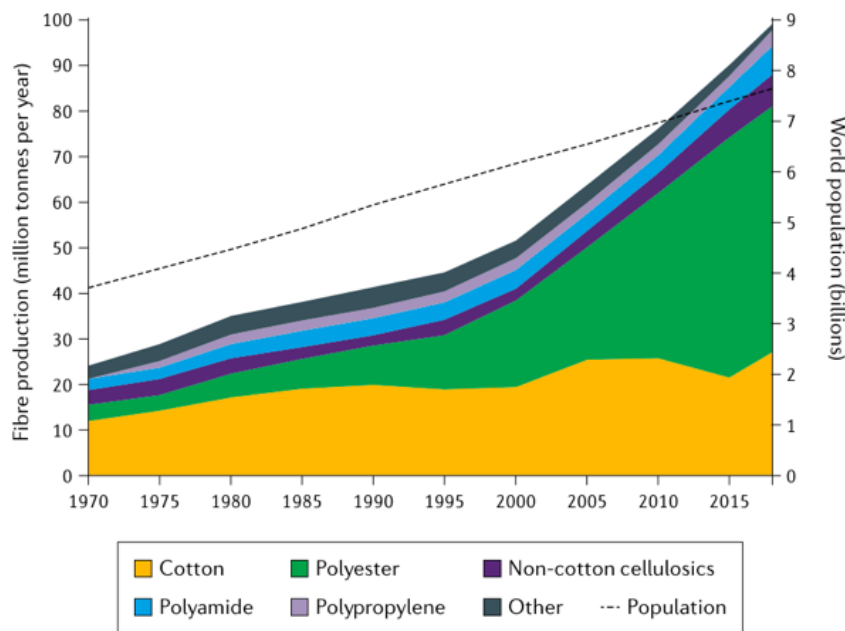


Figure 1: Growth in global population and textile production by fiber type (Niinimäki et al., 2020)

The textile industry also contributes to greenhouse gas (GHG) emissions by approximately 5-10% of the global annually emitted total GHG-Emissions (Niinimäki et al., 2020). A large portion of these emissions stems from the

production of synthetic fibers like polyester, which is derived from fossil resources. The usage of polyester in textile industries has risen fast in the last decades which can be seen in Figure 1. Furthermore, the energy-intensive processes of spinning, weaving and dyeing are predominantly powered by non-renewable energy sources, adding to the sector's carbon footprint.

Waste generation is another critical concern. Approximately 92 million tons of textile waste are produced globally each year, with most ending up in landfills or incinerated (Niinimäki et al., 2020). This represents about \$183 million worth of clothing, that is thrown away yearly (Chen et al., 2021). Less than 1% of discarded textiles are recycled into new garments, creating a linear waste model that depletes resources and generates pollution (Niinimäki et al., 2020). Moreover, synthetic fibers contribute to microplastic pollution not only in production-phase but also during the washing processes in the use-phase. These microplastics and dissolving chemicals infiltrate marine ecosystems, posing threats to biodiversity and entering the human food chain (Beverley et al., 2018).

Resource depletion further compounds the environmental challenges. The extraction of raw materials and the production of synthetic fibers require significant inputs of water, energy, and land. The intensive use of pesticides and fertilizers in cotton farming leads to soil degradation and loss of biodiversity (Chen et al., 2021).

## 2.2 Tendency for Sustainable Consumption

Important retailers situated in the fashion industry continue to promote fast fashion which is a major driver for the environmental problems mentioned above. Nevertheless, the tendency for sustainable consumption in the textile industry has gained significant momentum in recent years, driven by heightened environmental awareness and shifting consumer preferences (Voora et al., 2023). As individuals become more conscious of the environmental and social impacts of their purchasing decisions, demand for ethically produced and environmentally friendly textiles has risen (Testa et al., 2024).

A key driver of this trend is the increasing availability of information (Testa et al., 2024). Consumers today have a greater access to details about supply chain practices, product lifecycles, and the ecological footprint of clothing. This transparency has empowered them to make informed decisions, often prioritizing brands that align with sustainable values. Surveys reveal that millennials and Gen Z are more likely to support companies with ethical and eco-friendly practices. A study of Voora et al. (2023) has shown that 31% of Gen Z consumers were willing to pay more for environmentally friendly clothing compared to 12% of consumers from Boomer generation.

The rise of second-hand markets and clothing rental platforms also reflects the shift towards sustainable consumption (Reike et al., 2023). These models extend the life of garments, reducing the demand for new production and minimizing waste. Brands have responded to these changes by adopting sustainable practices, such as using organic or recycled materials, promote a second-hand market or cashback programs, reducing packaging waste, and ensuring fair labor conditions. This shift towards sustainable consumption represents a pivotal opportunity for the textile and fashion industry to align with environmental goals while meeting evolving consumer expectations.

## 2.3 Circularity Strategies in the Fashion Industry

Circularity strategies in the fashion industry aim to transition from the traditional linear model of "produce, use, dispose" to a circular system where resources are reused, recycled, or regenerated (Chen et al., 2021). The circular system should be decelerated by using resources longer and more intensively (Stewart & Niero, 2018). Lastly the circle should be narrowed by designing it more resource-efficient (Niinimäki et al., 2020). These strategies are important levers to reduce the environmental impact of textiles and clothing production and addressing resource scarcity.

To create the conditions for making textiles circular, they must also be designed as such. This includes using mono-materials or modular designs, which are easier to recycle, and ensuring that products can be disassembled into their components at the end of their lifecycle. Innovations such as biodegradable fabrics and closed-loop recycling systems further enhance circularity by reducing waste and promoting material recovery (Brügge et al., 2024; Chen et al., 2021).

Strategies to "slow the loop" and "narrowing" it, consist of new business models, such as clothing rental, resale or second-hand platforms, repair services or cashback models (Brügge et al., 2024; Chen et al., 2021; Niinimäki et al., 2020). These models extend the lifespan of garments and reduce the demand for new production, thus conserving resources and minimizing waste. Therefore, the following single case study of the company NIKIN is used to analyze a circular cashback program that was developed to close the life cycle of their products (NIKIN AG, 2025c).

### 3. Case Study NIKIN

#### 3.1 Introduction

More and more companies are embracing circularity, aiming to create closed-loop systems where every product is fully utilized and reintroduced into the production cycle. For example, the French fashion brand ARMEDANGELS is committed to producing not only stylish clothing but also pieces that minimize harm to the planet. Through their repair service, offered in collaboration with their partner MENDED, they ensure garments can be restored to "like new" condition using original spare parts. Their slogan, "We are not here to make fashion. We are here to make change," reflects their mission to create durable clothing (ARMEDANGELS, 2025a). By doubling the number of times clothes are worn instead of buying new ones, greenhouse gas emissions could be reduced by 44% (Ellen MacArthur Foundation, 2016). ARMEDANGELS also offers options to sell used items through their second-hand shop or recycle garments no longer in use (ARMEDANGELS, 2025b).

Similarly, the Swiss brand FREITAG prioritizes circularity by using not only recycled and upcycled materials but also recyclable ones. Constantly innovating, FREITAG continues to explore new materials and functionalities, ensuring their products evolve while staying true to sustainable principles (FREITAG, 2024).

NIKIN AG, a Swiss fashion brand founded in 2016, exemplifies how sustainability and style can coexist. With its mission to make eco-friendly fashion affordable, NIKIN integrates the principles of a circular supply chain into its operations, ensuring minimal environmental impact while fostering global reforestation (NIKIN AG, 2025a).

NIKIN, based in Lenzburg, Switzerland, has emerged as a leader in this domain. With no physical stores, NIKIN operates as a boutique e-commerce brand, selling its products online and through partner stores. This approach minimizes overhead costs and maximizes outreach to its 300,000-strong global customer base. Over two-thirds of its customers reside in Switzerland, with the remainder primarily in Germany (Conda.ch GmbH, 2025). The brand's core demographic includes environmentally conscious urban professionals aged 25–35, predominantly located in major Swiss cities such as Zurich, Basel, and Bern. Its customer base is defined by its loyalty and alignment with the brand's values. The prototypical NIKIN customers, "Jan" and "Lena," are urban professionals in their early 30s with incomes between CHF 7,000 and CHF 8,000. They embody an outdoor lifestyle, enjoying snowboarding, hiking, and other nature-related activities. Despite residing in urban areas like Thun and Bern, they maintain a strong connection to nature and seek brands that reflect their environmental values.

To reach this audience, NIKIN employs targeted digital marketing and collaborates with influencers. These partnerships enable the brand to connect with potential customers authentically, leveraging the influencers' reach and credibility (Vomvoris, 2022). The pricing strategy reflects its commitment to accessibility without compromising quality. Products range from unisex T-shirts priced at CHF 39.90 to women's sneakers starting at CHF 129.90. (NIKIN AG, 2025b). This balanced pricing positions NIKIN as an affordable yet sustainable option in the competitive fashion market.

#### 3.2 Circular Cashback Model of NIKIN

In November 2024 NIKIN introduced a new circular strategy, the cashback model. Cashback is defined as "a system in which banks or businesses encourage people to buy something by giving them money after they have bought it" (Cambridge University Press & Assessment, 2014). Therefore, when people buy NIKIN's products, they will get money back after buying the product. First pilots by NIKIN have shown, that the possibility to return the product after wearing it seems not to be attractive without a financial incentive.



Figure 2: Circular Cashback (NIKIN AG, 2025c)

NIKIN is testing the cashback model as a pilot with two of their products made of naNea material. The model is based on two types of products, a T-shirt and a sweatshirt. The idea is that in the first year after the client buys the product (for example a T shirt), he can give it back and will get 10 CHF back for the material. For each additional year the consumer uses the T shirt, CHF 2 are added into the cashback until he uses the T shirt for 5 years. After 5 years, the amount of the cashback is CHF 20. The system is the same for sweaters. The only change is that in this case, the client gets CHF 20 back in the first year for the material and after 5 years CHF 35 for the time and material. Three francs are added each year of use (NIKIN AG, 2025d). That way, customers are encouraged to wear the product as long as possible before sending it back and closing the loop. NIKIN's goal is to achieve circularity as shown in Figure 2.

Once returned, the clothes are recycled into new products, ensuring materials remain in use, reducing waste and guarantee circularity. This program not only rewards customers financially through a "return & earn" but also promotes a circular economy, helping to conserve resources and protect the environment (NIKIN AG, 2025d).

### 3.3 Product design

To create textile products suitable for circular processes, companies must choose materials that fit their circular strategy (Ellen MacArthur Foundation, 2021). Since NIKIN's strategy is to recycle the products, they needed a material suitable for recyclability. Additionally, to design sustainable products, the conventional polyester has to be substituted by other materials (Niinimäki et al., 2020).

For the material of their circular products, NIKIN works with a Swiss brand called OceanSafe. They produce textile materials that replace conventional materials. Their products are certified Cradle to Cradle Certified® Gold, biodegradable, recyclable, they do not contain persistent microplastics nor harmful chemicals substances. Furthermore, the materials are supposed to be highly scalable without need for new machineries for the manufacturing process and without compromises in quality and performance (OceanSafe AG, 2023b).

NIKIN is using one of the materials by OceanSafe called *naNea*. The material is an innovative, biodegradable co-polyester designed to the principles of the circular economy. NaNea is notable for its environmentally friendly properties as it does not release persistent micro or nano plastics. More than 93% of the material is supposed to biodegrade within 99 days in ocean water, soil or anaerobic landfill environments. Additionally, it is supposed to be infinite recyclable compared to other more classical types of materials that can't be recycled more than three times (OceanSafe AG, 2023a). The material is chemically recyclable or industrially compostable (NIKIN AG, 2023). NaNea material is described to be soft, performing like a conventional polymer and good in managing moisture. Furthermore, it is supposed to be functional and versatile in a broad range of applications (OceanSafe AG, 2023a).



These characteristics make it a good choice for NIKIN to achieve their goal of circularity. Nevertheless, there are some challenges in using the material, which will be briefly addressed in the next chapter.

One major disadvantage of the naNea material is the current feedstock, which is virgin fossil-based (OceanSafe AG, o. J., 2025). Therefore, the material will not help reduce emissions due to fossil resources. Additionally, the material has to be chemically recycled (NIKIN AG, 2023), which poses environmental challenges since the solvents used for dissolution are toxic. Furthermore, chemical recycling has a considerably higher energy consumption than mechanical recycling, but less than virgin production (Ribul et al., 2021). It can therefore be deduced that it is challenging to strike a balance between environmental concerns and recyclability when selecting materials for circularity.

## 4. Discussion

### 4.1 Challenges and opportunities

The transition from a linear to a circular supply chain strategy presents several challenges, including reducing material and energy consumption, replacing toxic materials, increasing recyclability, maximizing the use of renewable resources, extending product durability, and enhancing service capacities (Koszevska, 2018). A key challenge in designing 100% circular products is ensuring that all components—including stitching, labels, and prints—are fully recyclable. Especially the blending of different fibers poses challenges for recycling (Chen et al., 2021; Juanga-Labayen et al., 2022). When designing circular clothing, balancing product desirability and recycling properties can be challenging (Koszevska, 2018). Additionally, selecting materials suitable for recycling poses difficulties, particularly with cotton. Standard recycling methods allow cotton to be recycled only once or twice before it degrades into waste. Generally, the recycling of fibers is a challenge as it is expensive and the sorting technologies are still on a small scale (Chen et al., 2021).

NIKIN's experience with naNea material highlights the complexity of integrating new, sustainable materials into production. The material's properties differ from traditional polyester, leading to unexpected manufacturing issues. Customers reported discomfort due to the fabric's lower elasticity, while manufacturers faced challenges in processing it, as excessive heat during production altered its color. These obstacles illustrate that the adoption of new materials often requires trial and error, highlighting the need for continued innovation and process optimization. Additionally, biodegradable materials may need specific facilities to be recycled (Mhaddolkar et al., 2024). Although the naNea material itself is relatively affordable, the manufacturing process remains costly. Additionally, material availability presents another challenge.

Beyond material challenges, limited infrastructure for collecting and recycling materials poses a challenge (Koszevska, 2018). Transport and logistics also pose hurdles, as collecting, processing, and redistributing recycled materials requires an efficient infrastructure, which can increase carbon emissions. The logistics industry is responsible for around a quarter of global carbon dioxide emissions. Furthermore, reverse logistics (managing the return and recycling of products) can be complex and resource-intensive, further contributing to environmental impacts (Hofman, 2023; Sandvik & Stubbs, 2019).

A major challenge for NIKIN is the marketing of the circular products. Since many people do not know about circularity yet, they do not understand why it might make sense to buy an expensive T-shirt and get back money later. In the perception of the customers, the T-shirts are perceived as overpriced because they do not consider the money they get back later. Therefore, the company tries to explain the concept as simple as possible and runs marketing campaigns explaining circularity and their cashback program. Another communication challenge is the material naNea. While consumers perceive it as innovative, they still have concerns regarding it being a special type of polyester. They are concerned about sweating, smell and price. Furthermore, the material is still made from oil. To address concerns regarding the sustainability of their products, NIKIN markets them as biodegradable.

Furthermore, there can be legal challenges when it comes to implementing a circular cashback system. NIKIN struggled with whether calling it cashback is the best solution. Since Circular Cashback is not common in Switzerland, it is not clear how the value-added tax is handled for the returning products. This is due to an unclear status of ownership where either the customer owns the product and sells it back to NIKIN or he is only renting it.

Another challenge NIKIN had to face was balancing long term economic feasibility with sustainability. Ideally, the company wanted to make their circular products not more expensive than their other products by giving a 50%

cashback to make sustainability accessible. Since the company works together with wholesale retailers, which get a discount buying the products, a 50% cashback was not feasible.

Despite these challenges, the new circular strategy of NIKIN has brought several advantages for the company. NIKIN extended activities that are increasingly associated with greenwashing, like planting trees, to include circular activities like recycling and a cashback program. This led to an increase in credibility by sustainable customers that wouldn't buy their products before. Similar findings were observed in a Swiss study showing that circular products resonate well with diverse consumers (Brügge et al., 2024). The Cashback program could additionally be appealing to customers who are less interested in sustainability. While sustainable orientated consumers are often intrinsically motivated to adopt an environmental friendly behavior, other consumer groups need different incentives like financial benefits to act accordingly (Höpfl et al., 2024). On the other hand, it is not clear whether a consumer who is not motivated by sustainability would buy NIKIN's products in the first place as their customers are at least nature-conscious and the products in mid to high price range. Furthermore, introducing a cashback program results in new marketing opportunities. Ideas like 100% cashback on a small scale in exchange for customers using their time for nature volunteering can be valuable marketing measures that attract customer's attention and spread information about cashback.

Additionally, a big advantage for NIKIN is the early introduction of circular products in the market. NIKIN timed their strategy introduction just before several Swiss brands announced their circularity aims. The strategy introduction gained a lot of media attention (NIKIN AG, 2025c), which supports their image as first movers and an innovative company. Being a first mover can lead to several advantages like outperforming later entrants, a higher quality image perception and innovative leadership advantages (Zhang & Song, 2020) as well as an increased brand loyalty (Alpert & Kamins, 1994). Further opportunities of a circular strategy could be a circular Nutri score, which is even supported by Swiss consumers as a mandatory label (Brügge et al., 2024).

Overall, NIKIN's circular strategy could improve the sustainability of their products. By implementing a circular strategy through buying back used products and using recycled materials, environmental impacts can be reduced (Juanga-Labayen et al., 2022), and challenges like textile waste minimized (Koszevska, 2018). Through for example using recycled cotton by Säntis textile, which is recycled manually, the energy consumption compared to the virgin fiber production can be reduced by 80-95% (Ribul et al., 2021). Additionally, by using only bio-degradable materials like naNea, damages to the environment due to fiber plastics can be avoided (Chen et al., 2021).

#### 4.2 Discussion for Global Implementation

For a broader implementation of circular strategies, the presented case study could serve as a first mover example who paves the way for other companies. Currently, limited recycling technologies, high research and development costs as well as the establishment of a supporting supply chain pose challenges to the implementation of a circular economy in fashion (Sandvik & Stubbs, 2019). For a quick and grand transition to a circular fashion, the industry is depended on the knowledge, awareness and engagement of all stakeholders (Koszevska, 2018). NIKIN is testing and using many different materials and procedures needed in a circular fashion industry. Especially challenges like the recycling of fibers can be addressed and practices improved (Chen et al., 2021).

Another current barrier of circularity in fashion are consumer and producer disposal practices of textile waste (Koszevska, 2018). By testing a circular cashback program, this case study can contribute to finding effective practices for recovering textile waste which, if successful, can then be implemented by the whole industry. Additionally, NIKIN is gaining valuable experience with setting cashback prices that can help other companies. The material prices are already not expensive, and according to the experience curve they will further decrease when the demand increases (Weiss et al., 2010).

Nevertheless, all market participants must be involved in a transition from linear to circular models, which is why consumer demand for these products is necessary for a successful transition (Koszevska, 2018). Additionally, a global collaboration is necessary to achieve a high circularity of the fashion supply chain (Sandvik & Stubbs, 2019), possibly also across different industries (Shirvanimoghaddam et al., 2020).



## 5. Conclusion

This paper addresses the urgent need for sustainable solutions within the fashion industry, focusing on the transition from linear to circular models. Using NIKIN's circular cashback model as a case study, the research investigated how circular strategies can be implemented in practice. Key questions revolved around balancing sustainability and profitability, adapting supply chains, and understanding the role of consumer behavior. A mixed-method approach combining a literature review, and a case analysis was used to analyze the underlying questions.

The findings demonstrate that circular cashback models, supported by innovative biodegradable materials like naNea, provide a promising blueprint for achieving circularity in fashion. The strategy not only includes recycling but also offers financial incentives which can enhance consumer participation in circularity. By integrating recycling with monetary rewards, NIKIN encourages consumers to return products, thereby extending their lifecycle and reducing waste.

However, there are key challenges such as product design including material selection for recyclability, different material properties, limited manufacturing experience as well as little infrastructure for material manufacturing and recycling. Additionally, high process costs, emissions through logistics and difficulties in marketing as well as legal questions remain significant barriers.

The paper shows, that there is a need for balancing environmental concerns and recyclability when selecting materials for circularity in addition to balancing economic feasibility and sustainability.

The findings highlight the need for first movers to help the industry gain experience in circular practices through testing models like cashback, creating new processes and demanding materials suitable for recycling. Furthermore, the results show the need for an industry-wide and cross-industry collaboration and innovation to overcome technical and economic constraints.

From a practical perspective, this approach shows potential for significant environmental impact reduction, particularly through waste minimization and material recyclability. However, further empirical data on circular materials and models is needed, particularly regarding the long-term performance of circular models like the presented cashback program.

Future research should focus on identifying scalable circular business models that can be adapted across different regulatory and economic environments. Comparative studies across different markets can provide insights into how policy frameworks, infrastructure, and consumer behaviors influence the success of circular initiatives. Additionally, research should explore the role of digital technologies, such as blockchain for supply chain transparency or AI-driven sorting systems, in enabling efficient product returns and recycling. Further investigation into alternative materials with lower environmental footprints is necessary, as well as comparing new business models for circularity. Additionally, interdisciplinary studies that engage stakeholders across the supply chain, including policymakers, manufacturers and consumers, are essential for achieving systemic change. On the practical front, initiatives to educate consumers, incentivize sustainable practices and standardize circularity measures across industries will be vital for creating a sustainable textile ecosystem. Furthermore, this study is limited by using data from a single case study. Thus, an analysis of further expert interviews could strengthen the findings to identify strategies for implementing circular economy practices as well as their perception within the market.

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## References

- Almight Tree. (2024). *Nikin | Almighty Tree*. Almighty tree. <https://www.almightytree.ch/fr/nikin>
- Alpert, F. H., & Kamins, M. A. (1994). Pioneer Brand Advantage and Consumer Behavior: A Conceptual Framework and Propositional Inventory. *Journal of the Academy of Marketing Science*, 22(3), 244–253. <https://doi.org/10.1177/0092070394223005>

- Appolloni, A., Centi, G., & Yang, N. (2023). Promoting carbon circularity for a sustainable and resilience fashion industry. *Current Opinion in Green and Sustainable Chemistry*, 39, 100719. <https://doi.org/10.1016/j.cogsc.2022.100719>
- ARMEDANGELS. (2025a). *À propos de nous*. ARMEDANGELS. <https://www.armedangels.com/ch-fr/mission/a-propos-de-nous>
- ARMEDANGELS. (2025b). *Kleidung Reparieren Mended*. ARMEDANGELS. <https://www.armedangels.com/ch-fr/changemakers/kleidung-reparieren-mended>
- Beverley, H., Kirsi, L., & Ingun Grimstad, K. (2018). *Microplastic pollution from textiles: A literature review* (Project report No.1-2018). Oslo and Akershus University College of Applied Sciences.
- Brügge, C., Gomm, S., & Bernauer, T. (2024). Circular products resonate well with diverse consumers: Evidence from a choice experiment in Switzerland. *Journal of Cleaner Production*, 479, 143968. <https://doi.org/10.1016/j.jclepro.2024.143968>
- Cambridge University Press & Assessment. (2014). *Cashback*. <https://dictionary.cambridge.org/de/about.html>
- Castro-Lopez, A. (2021). Slow Fashion Trends: Are Consumers Willing to Change Their Shopping Behaviour to Become More Sustainable? <https://doi.org/10.3390/su132413858>
- Chen, X., Memon, H. A., Wang, Y., Marriam, I., & Tebyetekerwa, M. (2021). Circular Economy and Sustainability of the Clothing and Textile Industry. *Materials Circular Economy*, 3(1), 12. <https://doi.org/10.1007/s42824-021-00026-2>
- Conda.ch GmbH. (2025). NIKIN - THE SUSTAINABLE SWISS CLOTHING BRAND. *Conda Schweiz*. <https://www.conda.ch/en/kampagne/nikin-funding-en/>
- Ellen MacArthur Foundation. (2016). *How to Build a Circular Economy | Ellen MacArthur Foundation*. <https://www.ellenmacarthurfoundation.org/>
- Ellen MacArthur Foundation. (2021). *Material selection*. <https://www.ellenmacarthurfoundation.org/material-selection>
- Ellram, L.M., Tate, W.L. and Carter, C.R. (2007), "Product-process-supply chain: an integrative approach to three-dimensional concurrent engineering", *International Journal of Physical Distribution & Logistics Management*, Vol. 37 No. 4, pp. 305-330. <https://doi.org/10.1108/09600030710752523>
- Europäische Kommission (2022): Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen. EU-Strategie für nachhaltige und kreislauffähige Textilien. <https://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=CELEX:52022DC0141>
- Farooq, Q. Fu, P. Liu, X. Hao, Y. (2021). Basics of macro to microlevel corporate social responsibility and advancement in triple bottom line theory. *National Social Sciences Foundation volume 28 issue 3*. <https://doi.org/10.1002/csr.2069>
- Farrukh, A. Sajjad, A. (2024). Drivers for and barriers to circular economy transition in the textile industry: A developing economy perspective. *Sustainable Development volume 32 issue 6* <https://doi.org/10.1002/sd.3088>
- FREITAG. (2024). *Notre histoire | FREITAG*. [https://freitag.ch/fr\\_CH/mission/about-freitag/history?srsltid=AfmBOopVaCIgUuC5FFHUFVESLF1n8\\_VVVK5c4fuU7Oli4wrnY7NF3i2](https://freitag.ch/fr_CH/mission/about-freitag/history?srsltid=AfmBOopVaCIgUuC5FFHUFVESLF1n8_VVVK5c4fuU7Oli4wrnY7NF3i2)
- Hofman, H. (2023). *Closing the loop with circular economy logistics*. <https://www.maersk.com/insights/sustainability/2023/03/02/circular-economy-logistics?>
- Höpf, L., Grimlitz, M., Lang, I., & Wirzberger, M. (2024). Promoting sustainable behavior: Addressing user clusters through targeted incentives. *Humanities and Social Sciences Communications*, 11(1), 1192. <https://doi.org/10.1057/s41599-024-03581-6>
- Hunziker, S., Blankenagel, M. (2024). Design Science Forschungsdesign. In: Forschungsdesign im Bereich Betriebswirtschaft und Management. Springer Gabler, Wiesbaden. [https://doi.org/10.1007/978-3-658-44859-2\\_6](https://doi.org/10.1007/978-3-658-44859-2_6)
- Juanga-Labayen, J. P., Labayen, I. V., & Yuan, Q. (2022). A Review on Textile Recycling Practices and Challenges. *Textiles*, 2(1), 174–188. <https://doi.org/10.3390/textiles2010010>
- Karaosman, H. Alonso-Morales, G. Brun, A. (2016). From a Systematic Literature Review to a Classification Framework: Sustainability Integration in Fashion Operations. *Sustainability*. 9 (1) <https://doi.org/10.3390/su9010030>
- Koszewska, M. (2018). Circular Economy—Challenges for the Textile and Clothing Industry. *Autex Research Journal*, 18(4), 337–347. <https://doi.org/10.1515/aut-2018-0023>

- Mhaddolkar, N., Astrup, T. F., Tischberger-Aldrian, A., Pomberger, R., & Vollprecht, D. (2024). Challenges and opportunities in managing biodegradable plastic waste: A review. *Waste Management & Research: The Journal for a Sustainable Circular Economy*, 0734242X241279902. <https://doi.org/10.1177/0734242X241279902>
- Moorhouse, D., & Moorhouse, D. (2017). Sustainable Design: Circular Economy in Fashion and Textiles. *The Design Journal*, 20(sup1), S1948–S1959. <https://doi.org/10.1080/14606925.2017.1352713>
- Muthu, S. S. (Hrsg.). (2017). *Textiles and Clothing Sustainability*. Springer Singapore. <https://doi.org/10.1007/978-981-10-2146-6>
- Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T., & Gwilt, A. (2020). The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(4), 189–200. <https://doi.org/10.1038/s43017-020-0039-9>
- NIKIN AG. (2023). «naNea» by OceanSafe—The future of synthetic materials. <https://en.nikinclothing.com/blogs/nikin-blog/nanea-by-oceansafe-die-zukunft-synthetischer-stoffe>
- NIKIN AG. (2025a). About NIKIN. <https://en.nikin.ch/pages/uber-nikin>
- NIKIN AG. (2025b). NIKIN | herren. NIKIN CH. <https://fr.nikin.ch/collections/herren>
- NIKIN AG. (2025c). NIKIN und «Circular Cashback» in den Medien. NIKIN CH. <https://nikin.ch/pages/circularity>
- NIKIN AG. (2025d). Unser neues zirkuläres Geschäftsmodell macht die Natur zur Hauptprofiteurin. «Circular Cashback»—Return & earn. <https://nikin.ch/pages/circularity>
- OceanSafe AG. (o. J.). naNea Product Deck. Abgerufen 26. Januar 2025, von [https://exhibitorsearch.messefrankfurt.com/images/original/document\\_downloads/10000008202401/337385/1708533255171\\_1182941142.pdf](https://exhibitorsearch.messefrankfurt.com/images/original/document_downloads/10000008202401/337385/1708533255171_1182941142.pdf)
- OceanSafe AG. (2023a). naNea Materials. <https://www.oceansafe.co/textile-materials/nanea>
- OceanSafe AG. (2023b). OceanSafe Materials. <https://www.oceansafe.co/en/textile-materials>
- Patagonia. (2025). Product Repair Form—Patagonia. <https://www.patagonia.com/start-repair/>
- Rajkishore N, Amanpreet S, Tarun P, Rajiv P. A Review of Recent Trends in Sustainable Fashion and Textile Production. *Current trends Fashion TechnoTextile Eng*. 2019; 4(5): 55564810.19080/CTFTTE.2019.04.555648
- Reike, D., Hekkert, M. P., & Negro, S. O. (2023). Understanding circular economy transitions: The case of circular textiles. *Business Strategy and the Environment*, 32(3), 1032–1058. <https://doi.org/10.1002/bse.3114>
- Ribul, M., Lanot, A., Tommencioni Pisapia, C., Purnell, P., McQueen-Mason, S. J., & Baurley, S. (2021). Mechanical, chemical, biological: Moving towards closed-loop bio-based recycling in a circular economy of sustainable textiles. *Journal of Cleaner Production*, 326, 129325. <https://doi.org/10.1016/j.jclepro.2021.129325>
- Sandvik, I. M., & Stubbs, W. (2019). Circular fashion supply chain through textile-to-textile recycling. *Journal of Fashion Marketing and Management: An International Journal*, 23(3), 366–381. <https://doi.org/10.1108/JFMM-04-2018-0058>
- Shirvanimoghaddam, K., Motamed, B., Ramakrishna, S., & Naebe, M. (2020). Death by waste: Fashion and textile circular economy case. *Science of The Total Environment*, 718, 137317. <https://doi.org/10.1016/j.scitotenv.2020.137317>
- Stewart, R., & Niero, M. (2018). Circular economy in corporate sustainability strategies: A review of corporate sustainability reports in the fast-moving consumer goods sector. *Business Strategy and the Environment*, 27(7), 1005–1022. <https://doi.org/10.1002/bse.2048>
- Testa, F., Marullo, C., Gusmerotti, N. M., & di Iorio, V. (2024). Exploring circular consumption: Circular attitudes and their influence on consumer behavior across the product lifecycle. *Business Strategy and the Environment*, 33(7), 6961–6983. <https://doi.org/10.1002/bse.3849>
- Vomvoris, L. (2022). An interview with NIKIN AG - Influencer Marketing (D. Kilic) [Interview]. <https://digital-commerce.post.ch/en/pages/blog/2022/an-interview-with-nikin-ag-influencer-marketing>
- Voora, V., Bermudez, S., Farrell, J. J., Larrea, C., & Luna, E. (2023). *Cotton prices and sustainability*.
- Weiss, M., Junginger, M., Patel, M. K., & Blok, K. (2010). A review of experience curve analyses for energy demand technologies. *Technological Forecasting and Social Change*, 77(3), 411–428. <https://doi.org/10.1016/j.techfore.2009.10.009>

Yi Kwan, Y. Ngo, D. Shi. T. (2024). Sustainable Operations Management Practices in the Textiles, Apparel, and Footwear Industry *Journal of Supply Chain and Operations Management, Volume 22, Number 2* [https://www.csupom.com/uploads/1/1/4/8/114895679/jscom\\_v22n2\\_p4.pdf](https://www.csupom.com/uploads/1/1/4/8/114895679/jscom_v22n2_p4.pdf)

Zhang, H., & Song, M. (2020). Do First-Movers in Marketing Sustainable Products Enjoy Sustainable Advantages? A Seven-Country Comparative Study. *Sustainability, 12*(2), 450. <https://doi.org/10.3390/su12020450>

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