



A REVIEW PAPER ON CIRCULAR ECONOMY AND FASHION INDUSTRY

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ABSTRACT

The changing environment of circular fashion within the larger fashion industry is explored in this review study. The paper examines its emergence, fundamental ideas, and implications, synthesizing previous research to provide a thorough summary. It advances a better knowledge of how circularity is changing the dynamics of the modern fashion industry by examining sustainable practices, obstacles, and innovations.

INTRODUCTION

Within the fashion industry, circular fashion is becoming more and more popular as a sustainable strategy. It emphasizes responsible manufacture, recycling, and upcycling to reduce waste and extend the life of garments. In addition to choosing classic pieces, this trend encourages customers to take part in clothing donation or resale programs, which helps to create a more socially and environmentally responsible fashion industry.

The circular fashion trend, which emphasizes sustainability and resource efficiency, marks a paradigm shift in the fashion business. The guiding concepts of this approach are recycling, upcycling, and responsible production; they encourage a departure from the conventional "take, make, dispose" linear model. This trend seeks to lessen its influence on the environment and shift the sector in the direction of a more sustainable future by encouraging longevity, mindful consumption, and circular practices.

OBJECTIVES

- 1) To evaluate the differences between the circular economy and traditional linear fashion industry practices
- 2) To comprehend how fashion industry is now implementing circular economy practices
- 3) To explore developments, methods and technological advancements that support sustainable fashion

RESEARCH METHODOLOGY

The methodology employed in this literature review on circular economy and the fashion industry involves a systematic search of scholarly databases such as research papers, articles, journals, websites, electronic journals, and various report, Google Scholar. Keywords like "circular economy," "fashion industry," and related terms were used to identify relevant articles and academic papers. Inclusion and exclusion criteria were established to ensure the selection of studies that specifically address the intersection of circular economy

principles and the fashion sector. The review encompasses a comprehensive analysis of peer-reviewed articles, books, and reports published within the last decade, with a focus on empirical research and theoretical frameworks that contribute to understanding the challenges and opportunities of implementing circular economy practices in the fashion industry. The aim is to provide a nuanced synthesis of existing knowledge and identify gaps for future research in this critical area.

Using a systematic search of academic databases and appropriate search terms, relevant articles and academic papers were found for this literature study on the circular economy and the fashion business. To make sure that only studies that explicitly address the relationship between the fashion industry and the concepts of the circular economy are chosen, inclusion and exclusion criteria were developed. With an emphasis on empirical research and theoretical frameworks that help comprehend the opportunities and challenges of implementing circular economy practices in the fashion industry, the review includes a thorough analysis of peer-reviewed books, reports, and articles published within the last ten years. In order to fill in the gaps for further research in this important field, the goal is to present a nuanced synthesis of the body of current knowledge.

LINEAR FASHION ECONOMY

The conventional approach, in which raw materials are gathered, processed, and manufactured into goods that people use before throwing them away as garbage, all without considering the effects these products would have on the environment. Profit is given precedence above sustainability, and the products are designed to be discarded after usage. [2]

The economy that is linear, the "linear economy model" has been the most widely accepted economic model since the industrial revolution in the 18th century. Raw resources were widely available for low prices during the industrialization era, and because of emerging technologies, the linear economy



model predominated in business. In actuality, this model reflected the rise in material production, employment, urban development, standard of living, profit, and demand for all commodities.[4]

It has adverse side effects, such as economic loss, environmental destruction, and threats to human society. To address these adverse consequences from fashion's linear system, governments and business leaders are advocating the societal need for a shift from the linear economy to the circular economy. [11]

The linear economy is based on a traditional linear business model and follows a "take-make-waste" scheme. Resources are taken from their source and transformed into products manufactured for consumption. The residuals of this consumption later accumulate in a landfill or are incinerated. The way a linear economy deals with raw materials puts pressure on scarce resources and has little concern for environmental impact. Businesses produce and sell as many products as possible with profit as their only goal, leaving many economic opportunities untapped. The "take-make-waste" paradigm of the linear economy is based on a conventional linear business model. Products that are intended for human use are created by extracting resources from their natural state. Later, the leftovers from this consumption are burned or dumped in a landfill. When it comes to raw materials, a linear economy uses limited resources and pays little attention to how its actions may affect the environment. Businesses create and market as many goods as they can with the sole intent of making a profit, therefore squandering several business possibilities. [3]

This linear system has substantial detrimental effects on society at the local, regional, and worldwide levels. It wastes resources, misses out on economic possibilities, pollutes the environment, and damages ecosystems.[5] The fast fashion industry is a major source of pollution that has detrimental effects on both terrestrial and aquatic environments. These effects include habitat degradation, the growth of chemicals and microplastics in waterways, and the escalating effects of climate change due to greenhouse gas emissions from human activity. [6] The poor quality of fast fashion clothing contributes to the limited lifespans of garments, which often end up decomposing slowly in landfills or being incinerated. In addition to degrading in landfills or being incinerated, fast fashion clothing has also become a notorious source of microplastics in marine environments as the cheap, plastic-based materials shed fibers that make their way to the oceans. [6] Workers — primarily young women — are subjected to hazardous working conditions while earning unlivable wages, despite the companies pulling in massive profits.[6]

CIRCULAR ECONOMY AND FASHION INDUSTRY

The foundation of a circular economy is the idea of planning out waste and pollution, reusing materials and goods. Within the fashion business, "circular fashion" refers to a regenerative methodology that minimizes waste, pollution, and the use of natural resources in the design, production, and consumption of garments and fabrics. Designing for durability, utilizing

sustainable materials, recycling waste, and switching to renewable energy sources throughout production are all essential elements of circular fashion. [7]

Beginning with the raw resources needed to produce fiber and ending with the product's last stages of life, circular fashion addresses sustainability from all angles. [8]

Patagonia, a leader in sustainable clothes, is a prime example of a brand operating in the circular fashion industry. Patagonia's business strategy incorporates circular ideas as part of its commitment to reduce its environmental impact. The company's primary goal is to reduce waste and prolong the life of clothing by producing long-lasting, high-quality items. [7] The concrete advantages of implementing sustainable practices for the environment, Patagonia's efforts in the circular fashion industry have established a standard for other firms to meet. [7]

The fashion industry's various segments must work together to achieve circularity. These include companies that create raw materials, textiles, clothing, and retail. Developing a circular fashion sector also requires consumer and government input. [8]

The distinction between materials that degrade naturally and those that don't is one of the fundamental concepts of circular fashion. This separation occurs when producers employ both kinds of materials in a single product, but they can still be separated during the reprocessing and renewal phases. [8]

INNOVATION

The fashion industry has seen a rise in eco-friendly ideas and workable solutions to mitigate its environmental impact in recent years. In response to growing customer awareness of sustainability, brands are aggressively implementing eco-friendly procedures and technology. [10]

In an attempt to reduce the impact that their purchases have on the environment, consumers of today are very selective about the companies with whom they do business. Over the previous five years, there has been a more than 70% increase in web searches for eco-friendly products in the sustainability trend, slow fashion movement, and ethical fashion categories. Three out of five people now say that consideration for the environment is a major consideration when making purchases, according to McKinsey. This is starting to show up in developments in the apparel industry's technology, as new sustainable fashion technologies are being developed with the goal of addressing the root causes of the sector's problems. Innovations in sustainable fashion are changing recycling and production. [9]

Using more sustainable materials and fabrics is one of the biggest green advancements. Because organic materials have less of an impact on the environment than conventional materials, brands are gravitating towards hemp, bamboo, Tencel, and organic cotton. [10]

An effective way to address the waste issue in the fashion industry is the growing popularity of circular fashion projects.



To increase the lifespan of apparel, brands are introducing second-hand marketplaces, clothing rental services, and take-back programs [10]

As an eco-friendly substitute for conventional screen-printing techniques, digital printing is becoming more and more popular. Because digital printing allows for exact ink application, it consumes less ink and uses less water. [10]

Brands are placing greater emphasis on building sustainable supply chains. They are partnering with suppliers and manufacturers that follow ethical and eco-friendly practices. Transparent supply chains allow brands to trace the origin of raw materials, ensuring they meet sustainability standards and fair labor practices. [10]

3D Virtual sampling: Physical samples were previously required for the design process as well as the purchasing and selling lifecycle. [9]

Alternative textile: Alternatives are being made available via the development of sustainable technologies for clothing and textiles that are reusable, regenerable, recyclable, and sourced ethically. [9] Designers like Stella McCartney have pioneered closed-loop and sustainable business models using innovative materials such as bio-based fur. [9]

Automation and fashion on demand: Clothes are ordered, then produced, as opposed to being made and then sold. While the cost of manufacturing single and small batch production is higher today [9]

BENEFITS

The fashion sector can drastically lessen its ecological footprint and help create a brighter future by adopting circular fashion, which has several environmental advantages that complement the goals of planting trees. [7]

1. **Reduced waste and pollution:** The goal of circular fashion is to increase the lifespan of clothing by using creative design, repair, and recycling techniques. Longer clothing wear durations significantly lower the quantity of textile waste that is disposed of in landfills, can reduce the amount of dangerous chemicals released into the environment and rivers. [7]
2. **Conservation of natural resources:** Circular fashion lessens the need for new production by utilizing recycled materials and extending the life of existing garments, which saves energy and water resources. [7]
3. **Decreased carbon footprint:** The utilization of renewable energy sources, such solar or wind power, in production is also encouraged by circular fashion. The garment business can lessen its carbon footprint and contribute to international efforts to mitigate climate change by moving away from fossil fuels. [7]
4. **Support for biodiversity and ecosystem health:** Considering that these substances decompose more readily in the environment, this strategy also aids in the reduction of microplastic pollution. The objectives of planting trees and other environmental organizations are in line with the need to reduce microplastic

contamination, which poses a serious threat to aquatic ecosystems and the larger environment. [7]

CONCLUSION

This study concludes by highlighting the complex relationship that exists between the circular economy and the fashion industry, as well as the increasing significance of incorporating circular economy ideas inside the fashion sector. Based on available data, it appears that adopting circularity in the fashion industry is essential for sustainable growth. To ensure that circular strategies are effective, education and awareness initiatives are necessary to promote responsible consumption and disposal habits. In order to convert the existing linear model into a circular one and eventually help the fashion industry move toward a more sustainable and responsible future, the research urges for ongoing investigation and concrete actions.

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