

T-SHIRTS TO TOTES: HOW T-SHIRTS IMPACT THE ENVIRONMENT

by

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Abstract

The environmental impact of T-shirt production and consumption is profound, driven by material choices, production processes, consumption patterns, and waste generation. Sandra Roos' analysis reveals the detrimental effects of conventional cotton cultivation and polyester use, highlighting the urgency for sustainable alternatives. Energy-intensive production processes and chemical pollution underscore the need for cleaner methods. Moreover, consumer behavior, characterized by a disposable mindset and energy-intensive maintenance, exacerbates the problem. Textile waste, fueled by fast fashion, demands circular solutions. Roos advocates for circular business models that decouple revenue from resource use, offering hope for a sustainable future. In conclusion, Roos' insights call for immediate action and collaboration across the fashion industry to embrace sustainability and enact transformative change.

Introduction

In the dynamic landscape of fashion, the environmental impact of clothing items, especially T-shirts, is intricately woven into choices spanning material selection, production processes, consumption patterns, and waste management practices. Sandra Roos' insightful life cycle analysis serves as a guiding beacon, illuminating the complex web of environmental implications associated with T-shirt production and consumption. As we delve into this discourse, we navigate through the significant factors influencing the sustainability of T-shirts, exploring Roos' findings on material choices, production processes, and consumer behaviors, while also delving into innovative solutions for waste repurposing. The call for a more sustainable fashion industry, echoed by Roos, urges us to rethink our approach—from material sourcing to disposal—and embrace circular business models that decouple revenue from raw material production. As we embark on this journey, we not only uncover the environmental challenges but also discover creative avenues for repurposing old T-shirts, underlining the potential for a more sustainable and responsible fashion future. (Hurst, 2017).

Materials and Methods

Research Design: This study used a mixed-methods approach, combining quantitative and qualitative data collection and analysis.

Data Collection: The study used secondary data that was collected through a review of relevant literature, reports, and articles. Data was also collected through an assignment conducted in MRCH 2035 about the awareness students have on the environmental impact of T-shirts.

Data Analysis: Data from relevant literature, reports, and articles, were analyzed using descriptive statistics to determine the amount of textile waste generated by the t-shirt industry and consumer attitudes towards textile waste and sustainability.

Results

Material Choice:

Cotton Impact: The choice of cotton for T-shirts has significant environmental implications. Conventional cotton cultivation involves the extensive use of pesticides and fertilizers, contributing to soil degradation and water pollution. Sandra Roos' life cycle analysis highlights the water-intensive nature of cotton, shedding light on the considerable water footprint associated with T-shirt production (Hurst, 2017).

Polyester Concerns: The incorporation of synthetic materials, particularly polyester, in T-shirts poses environmental challenges. Being derived from petroleum, polyester is non-biodegradable and adds to resource depletion. Roos' analysis emphasizes the need for a nuanced understanding of the environmental impact of different materials, as polyester garments may have a higher carbon footprint compared to more environmentally friendly alternatives (Hurst, 2017).

Production Processes:

Energy and Water Consumption: The production of T-shirts involves energy-intensive processes such as spinning, knitting, dyeing, and finishing. Roos' research underscores the substantial energy and water consumption during these stages, contributing to overall environmental degradation. Awareness of these impacts is crucial for making informed choices in the fashion industry (Hurst, 2017).

Chemical Pollution: Dyeing and finishing stages in T-shirt production often entail the use of chemicals, leading to chemical pollution. The inclusion of environmental indicators such as freshwater toxicity and eutrophication in Roos' analysis sheds light on the broader ecological consequences of these chemical processes. Sustainable alternatives and cleaner production methods are essential to mitigate such environmental harm (Hurst, 2017).

Consumption Patterns:

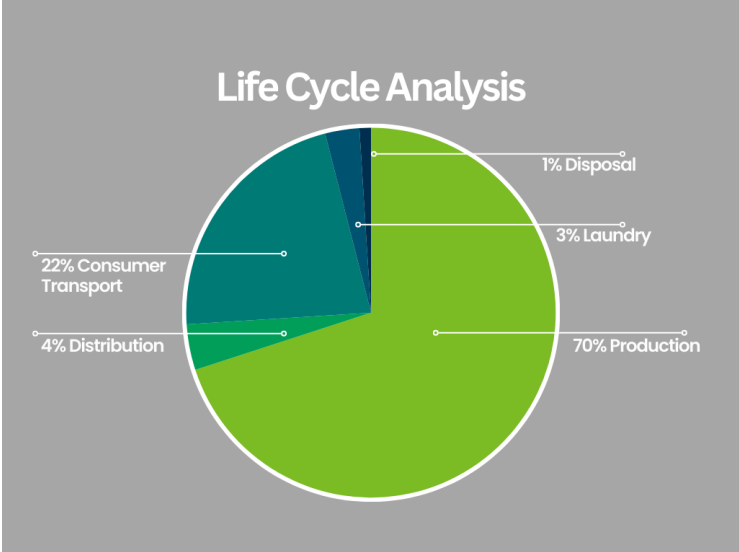
Disposable Mindset: Consumer culture's encouragement of excessive T-shirt consumption fosters a disposable mindset. Frequent purchases driven by rapidly changing fashion trends contribute to resource-intensive production cycles. Roos' insights into the lifecycle of garments, including the impacts of daily use and discard, emphasize the need to address consumer behavior for a more sustainable fashion industry (Hurst, 2017).

Energy-Intensive Maintenance: Regular washing and drying of T-shirts by consumers contribute to escalated energy and water usage. Roos' findings challenge common beliefs, revealing that washing temperature has less than a 1% impact on the climate compared to factors like transportation (Hurst, 2017). Understanding the significant role of consumer habits is crucial for developing effective sustainability initiatives.

Waste Generation:

Textile Waste: T-shirts play a significant role in the issue of textile waste due to their association with fast fashion. The disposable nature of cheaply produced T-shirts contributes to high levels of waste. Roos' analysis, when applied at a national scale, provides a broader perspective on the cumulative environmental impact of T-shirt disposal (Hurst, 2017). The linear model of production and consumption perpetuated by the fashion industry becomes apparent, emphasizing the need for a shift towards circular and sustainable practices. Landfill Contributions: The end-of-life stage for T-shirts often involves disposal in landfills, where they emit methane, a potent greenhouse gas. This aspect, highlighted by Roos, adds urgency to the call for more responsible waste management practices in the fashion industry (Hurst, 2017). Initiatives focusing on recycling, upcycling, and circular economy principles can contribute to mitigating the environmental impact of T-shirt disposal.

Charts:



Ways to Recycle

Cloth Recycling Centers: Many communities have cloth recycling centers where you can drop off old clothing, including t-shirts, for recycling. These centers may repurpose the fabric for various uses (BuildGreenNH, 2024).

Quilting: If you have sewing skills, you can cut up t-shirts and use the fabric to create patches for quilts or even make a t-shirt quilt (BuildGreenNH, 2024).

Donations to Animal Shelters: Animal shelters often accept old t-shirts to use as bedding or for cleaning purposes. Check with local shelters to see if they need them. Or cut up your old t-shirts into strands and create dog toys (BuildGreenNH, 2024).

Yarn Making: Cut old t-shirts into thin strips to create t-shirt yarn. This can be used for knitting, crocheting, or other crafts (BuildGreenNH, 2024).

Tote Bags: Make old t-shirts into tote bags by cutting and sewing (BuildGreenNH, 2024).

Circular Fashion

“Circular business models decouple revenue from production and resource use.” (Fashion). “By decoupling revenues from raw material production – through business models such as resale, rental, repair and remaking – greenhouse gas emissions, pollution, and biodiversity impacts can all be reduced.” (Fashion).

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