



INDUSTRIAL SUSTAINABILITY - FACTORS AFFECTING SUSTAINABILITY IN TEXTILE INDUSTRY

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Abstract :

Public consciousness and the growing perception of social knowledge of the environment have forced the textile industry to produce environmentally. For this reason modern technologies help textile industries and focus on environmentally friendly way of production . In order to create a sustainable textile, the main drivers for change have been related to eco-materials in order to reduce and harmless waste, reuse/ recycling, reduced use of energy, water and chemicals and ethical issues in production processes. This article highlights in detail the environmental effects of textiles and contributes to an easy and sustainable production of textiles industry by initiating a discussion on the potential for change in textile processes in accordance with legislation.

Keywords:

Sustainability , Impacts , Factors , Fast Fashion ,Pro's and Con's .

1. Introduction :

Among the most polluting industries in the world, questions of sustainability in the textile and clothing industry have received a lot of attention. With geographically large and complex global production networks, as well as the double pressure for costs and deadlines, implementing sustainability within textile and clothing supply chains is a challenge[1]. The transformation process from raw materials to finished clothing has significant negative impacts on the environment and society, including air and water and the exploitation of human resources, especially when production is sub-contracted to countries where labor costs are lower. The triple bottom line approach implies that businesses should take into account social and environmental performance, not just financial performance .Being more sustainable is now key to the development of the textile and clothing supply chain, and a number of issues and innovations related to this objective. Product returns, low-carbon supply chains, corporate social responsibility, sustainable design practises, and sustainable competition are among the objectives that have so far been studied in academic literature.

However, in today's global textile and clothing sector, there is still a dearth of additional and thorough examination of many other contemporary concerns connected to sustainable supply chain management[2].

2.Environmental Impacts :

The word "sustainability" is fairly broad and, in the opinion of some, is frequently used incorrectly. We'll divide it into 4 easily digestible parts so that everyone can see how our actions affect the environment in each area. Social ,Human ,Economy and Environment [3] .Guo et al.'s [4] investigation of the worldwide garment manufacturing process' evaluation and selection of green suppliers. They created a methodological framework for the triple bottom line-based evaluation and selection of green suppliers before putting forth a fuzzy multi-criteria decision-making model for choosing the best material suppliers. To confirm the efficacy of the suggested supplier evaluation and selection model, a sensitivity analysis was done.

The creation of a closed-loop supply chain is a crucial sign of sustainability. Norum [5] used a qualitative approach to research the disposal of consumer clothes, conducting semi-structured in-depth interviews with 24 female U.S. customers. The use of "compensatory" and "non-compensatory" choice heuristics in decision-making, a "usable life" and the "personal nature" of clothing as barriers to non-trash disposal options, and the need to "create awareness" and "provide assurance" to support alternative disposal modes are just a few of the key themes the author identified.

01. HUMAN 02. SOCIAL 03. ECONOMIC 04. ENVIRONMENTAL

2.1 Humans :

Focuses on how we can protect and enhance the quality of human life while minimizing our impact on the resources of the earth..The needs of each person are growing daily as a result of cultural preferences, climatic conditions, etc. Fast fashion increases the convenience of shopping [6]

2.2 Social :

Social A market that values everyone equally, with community at our center. Social injustice and discrimination contribute to cultural and environmental degradation. We share our values openly and widely to welcome and support all partners, visitors, local community members and stakeholders, regardless of race, gender, age, religion, and other demographic factors[7]

2.3 Economic :

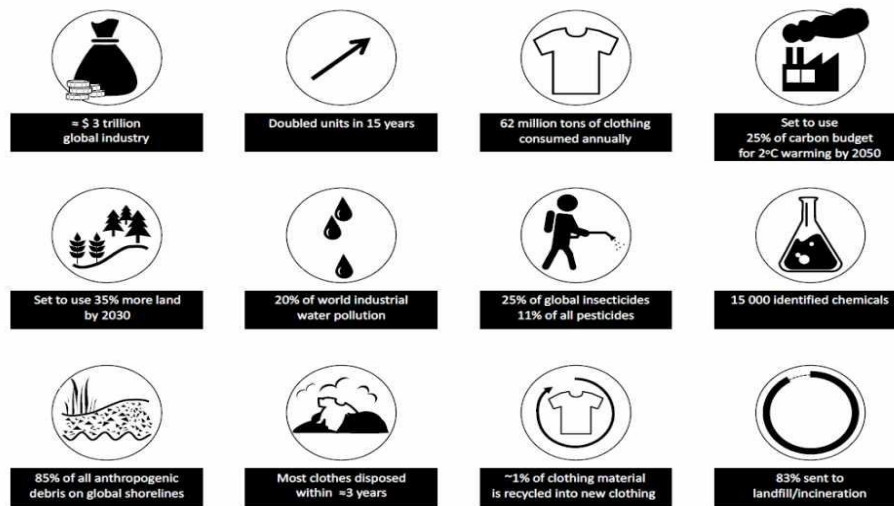
Economic sustainability requires that a business or country uses its resources efficiently and responsibly, so that it can operate in a sustainable manner, consistently producing operational profit[8]

2.4 Environment :

Environmental sustainability means that we are living within the means of our natural resources, clearly understanding what resources are abundant and which are scarce. Knowing and reducing the damage to the environment from extraction of these materials, helps to establish how resources can be kept within the Circular Economy principles[9]

3. Fast Fashion Affecting Environment :

Fast fashion comes at an astonishing environmental and social cost. While the impacts of the fashion industry in terms of pollution, water use, carbon emissions, human rights, and gender inequality are increasing, the need for a shift to sustainable fashion is evident. Organizations in Geneva and beyond are joining efforts to shift the fashion economy and foster international cooperation on the issue. The fashion industry produces 10% of all humanity's carbon emissions and is the second largest consumer of the world's water supply[10]. Washing clothes, meanwhile, releases 500,000 ton of micro fibers in to t h e ocean, the equivalent of 50 billion plastic bottles. Many of those fibers are polyester, a plastic found in an estimated 60 % of garments. Producing polyester releases two to three times more carbon emissions than cotton, and polyester does not break down in the ocean. A 2017 report from the International Union for Conservation of Nature (IUCN) estimated that 35% of all microplastics very small pieces of plastic that never biodegrade — in the ocean came from the laundering of synthetic textiles like polyester[11]. Overall, microplastics are estimated to compose up to 31% of plastic pollution in the ocean. WATER IMPACT 85% of all textiles go to the dump each year. And washing some types of clothes sends thousands of bits of plastic into the ocean. Clothing production has roughly doubled since 2000.



While people bought 60% more garments in 2014 than in 2000, they only kept the clothes for half as long. In Europe, fashion companies went from an average offering of two collections per year in 2000 to five in 2011[12]. Some brands offer even more. Zara puts out 24 collections per year, while H&M offers between 12 and 16. A lot of this clothing ends up in the dump. The equivalent of one garbage truck full of clothes is burned or dumped in a landfill every second. The fashion industry is responsible for 10% of humanity's carbon emissions. If the fashion sector continues on its current trajectory, that share of the carbon budget could jump to 26% by 2050, according to a 2017 report from the Ellen MacArthur Foundation. The fashion industry is also the second-largest consumer of water worldwide. It takes about 700 gallons of water to produce one cotton shirt. That's enough water for one person to drink at least eight cups per day for three-and-a-half years[13]. It takes about 2,000 gallons of water to produce a pair of jeans. That's more than enough for one person to drink eight cups per day for 10 years. That's because both the jeans and the shirt are made from a highly water-intensive plant: cotton.[14] Fashion causes water-pollution problems, too. Textile dyeing is the world's second-largest polluter of water, since the water leftover from the dyeing process is often dumped into ditches, streams, or rivers. The dyeing process uses enough water to fill 2 million Olympic-sized swimming pools each year. The fashion industry is

HOW MUCH CLOTHING DO WE WASTE?



1 GARBAGE TRUCK
of clothes are burned
or landfilled every **SECOND**



Enough to fill
1.5 EMPIRE STATE
BUILDINGS every **DAY**



Enough to fill
2019
SYDNEY HARBOR
every **YEAR**



2, 625 kilograms
of clothing



82,782,000,000 kilograms
of clothing

Source: Ellen MacArthur Foundation.

4. Pros and Cons :

PROS OF SUSTAINABLE FASHION[16]

1. Saving Natural Resources And Lowering Carbon Footprints
2. Saving The Animals
3. Better Working Condition
4. Quality = Money
5. Extending Your Cloth Life Can Save Tons Of Money
6. Innovative Fashion
7. A Better You
8. Put A Check On your Shopping Impulse

CONS OF SUSTAINABLE FASHION [17]

1. Slow Adoption In Markets
2. Expensive Cloth Lines
3. The Danger In Greenwashing
4. Choice Of Market Is Low
5. Low support from All Levels Of Economy
6. Becoming A responsible Citizen Is The Key.

5.Key Facts :

Companies can lessen pollution in their supply chain by taking the following actions[18]: Considering environmental effects throughout production design, including the option between synthetic and natural fibers;collaborating with industry partners to increase the efficiency of waste treatment procedures and find new, less-harmful dyeing and finishing methods;

evaluating the effects of manufacturing on the environment using instruments like the Higg Facility Environmental Module:[19]

Applying the NRDC/Clean by Design's 10 Best Practices for Textile Mills to Save Money and Reduce Pollution; Motivating consumers to lessen their own impacts by carefully washing and buying high-quality clothing that sheds fewer fibers.

6. Conclusion :

Sustainability is much more than just a buzzword at the moment. Environmental protection, economic and social growth are the three main components of sustainability, and each one should be taken into account in connection to the others[20]. Because it preserves people's quality of life while preserving ecosystem diversity and the world's ecosystems in a variety of ways, including the preservation of natural resources, provision of energy savings, reduction of waste production, investment in the future, and economy through recycling and reuse. In this sense, the concept of sustainability has become a matter of concern in the textile sector.

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