

Examining Current Practices in the Fast Fashion Industry and the Progress Towards a Sustainable Future

Alessandra Shires
NSU University School
alessandransu@gmail.com

Jack Kolb
Georgia Institute of Technology
kolb@gatech.edu

The fast fashion industry has rapidly grown to producing low-quality garments at inexpensive costs to meet consumer demand. However, due to its high environmental and social impacts, the industry has faced extensive criticism. Billions of gallons of water are used each year, while carbon emissions from the fast fashion industry have started to surpass those from some transportation sectors. While the literature has contributed reviews of governmental regulations, environmental impacts, and consumer behavior, few works have contributed a comprehensive review of the industry from a sustainability perspective. In this work we explore current practices in the fast-fashion industry – we review current efforts towards sustainable production, evaluate existing initiatives by governments, highlight the importance of company-driven industry responsibility, and identify areas for future research towards social and environmental sustainability within the industry.

1. INTRODUCTION

The fashion industry is continuously evolving with new trends, garments, and patterns. However, the industry is also increasingly scrutinized for the substantial effects it has on both our environment and society. With approximately 93 billion cubic meters of water being wasted annually on fast fashion merchandise, it equates to meeting the water needs of five million people (Hsu et al., 2021). The United Nations Conference on Trade and Development (2019) ranks the fashion industry as the second most polluting industry globally (Hsu et al., 2021). Furthermore, the industry's carbon emissions surpass those of all international flights and maritime shipping combined, on track to contribute to over 50 percent of annual global carbon emissions by 2030 (Bank, 2019).

Beyond its environmental footprint, the fashion industry is also labor-intensive, posing numerous social and ethical challenges. Many companies aiming to produce garments at such a fast pace to keep up with trends rely on low-wage labor in developing countries, posing concerns about workers' rights, fair wages, and safe working conditions. In response to these multifaceted issues, there is a growing consensus that consumers must be better equipped to make sustainable choices and protect others from misleading practices within the fast fashion industry.

In recent years, governments have started addressing concerns around deceptive practices used by the fast fashion industry. The European Commission has proposed measures to com-

bat “greenwashing” and “planned obsolescence.” This includes banning generic environmental claims that lack substantiated ecological performance, and prohibiting the use of voluntary sustainability labels not verified by third-party organizations or public bodies (Obadia, 2023). Given the pressing environmental and ethical issues, sustainable practices within the fashion industry are gaining attention as potential solutions.

This paper outlines the current sustainable practices in the fashion industry and evaluates the effectiveness of certain practices in mitigating environmental impacts. By examining these practices, we identify the impact individual consumers can have in transforming the fast fashion industry towards greater sustainability and responsibility. In addition, we analyze the governmental and commercial efforts to address the sustainability challenges within the fast fashion industry, including strategies that have proven effective, and present recommendations for bettering the industry’s environmental and social responsibility. By exploring the successes and failures of current actions, this research aims to contribute to the ongoing conversation on how to foster a more sustainable fashion industry.

2. GOVERNMENT REGULATIONS

Government regulations play an important role in steering the fashion industry towards sustainable practices. One action plan towards “sustainable success” was brought by the European Union to reduce waste and promote recycling within the industry (Spani, 2020). This action plan seeks to transition the fashion industry from a linear to a circular economy and emphasize the importance of designing products with not just wearing the item, but their entire lifecycle in mind. Adopted in 2020, the new circular economy action plan proposes that 80 percent of products’ environmental impact be determined at the design phase. On the consumers’ side, “The Commission will propose a revision of the EU consumer law aimed at providing consumers with the full amount of information on products at the point of sale, including their lifespan and availability of repair services, repair manuals, and spare parts, and offering additional protection against greenwashing and premature obsolescence by setting minimum requirements for green labels/logos and information tools” (Spani, 2020). Related research has identified core attributes of the fast fashion industry that governments should address via regulation (Li et al., 2014):

Time: Company efforts on rapid production cycles often prioritize speed over sustainability, leading to significant environmental degradation. The race to produce the latest trends quickly result in increased waste, higher carbon emissions, and unsustainable practices that sacrifice environmental health.

Cost: Cost efficiency frequently comes at the expense of fair wages and ethical labor practices. To maintain low prices, many fast fashion brands exploit workers by paying them below living wages and subjecting them to poor working conditions, further exacerbating social inequalities.

Quality: The quality of fast fashion garments is often compromised in favor of low prices. This results in products with shorter lifespans that contribute to increased waste, as consumers frequently dispose of these items after only a few wears, leading to more waste in landfills.

Service: Service refers to both consumer satisfaction and the impact on communities and our ecosystems. While fast fashion companies focus on delivering trendy items quickly, they often overlook the long-term consequences on local communities and the environment, perpetuating harmful practices.

Environmental Concerns: Environmental concerns are a significant issue, with fast fashion

being a major contributor to pollution and carbon emissions, as well as unsustainable water usage. The industry's practices have far-reaching impacts, from water pollution to the depletion of natural resources, making it one of the most environmentally damaging sectors.

Resources: Natural and human resources are exploited in ways that undermine long-term sustainability. The overuse of natural resources combined with minimizing the cost of labor creates a system that is neither sustainable or ethical.

People: The people involved in every stage of the supply chain—from production to consumption—are significantly impacted by the industry's practices. Workers in developing countries (also where most factories and sweatshops are) bear the brunt of these negative consequences, including poor working conditions, low wages, and health risks associated with unsafe work environments (Li et al., 2014).

In addition to the European Union's initiatives, other regions and countries are implementing similar regulations aimed towards making positive environmental impacts within the fast fashion industry. For example, France passed its Anti-Waste and Circular Economy Law in 2020, which includes measures to prevent the destruction of unsold clothing and encourage companies to donate or recycle unsold items instead. The regulation took aims to hold fashion brands accountable for their waste and push them towards more sustainable production and disposal methods (Riemens et al., 2021). It prohibits the destruction of unsold clothing and other non-food goods, which was a common practice in the fashion industry to maintain brand exclusivity and avoid excess stock management costs (Riemens et al., 2021). Major companies are now required to donate, recycle, or re-purpose these items to reduce the vast amount of textile waste that would have otherwise ended up in landfills. This not only encourages a shift towards more sustainable business practices but also promotes a circular economy within the fashion industry, where products are kept in use for as long as possible. Holding fashion brands accountable for their unsold inventory pressures these companies to rethink their production strategies by producing fewer but higher-quality items, and to consider the environmental impact of their operations. This new legislation helps to combine the efforts to increase transparency within the supply chain of the fast fashion industry and to ensure that sustainability becomes an integral part of the fast fashion industry's business model rather than an afterthought. Furthermore, the introduction of Extended Producer Responsibility schemes in various countries, including the UK and Japan, mandates that companies take responsibility for the entire lifecycle of their products, from production to disposal. Under these schemes, brands are encouraged to adopt more sustainable practices, such as using eco-friendly materials, reducing packaging waste, and designing products that are easier to repair and recycle (Ramasubramanian et al., 2024).

Along with sustainable regulation changes in the fashion industry, laws surrounding basic safety standards to comprehensive environmental and labor laws have also continued to evolve. For example, the Bangladesh Accord on Fire and Building Safety, established after the 2013 Rana Plaza collapse, is a significant milestone. The Rana Plaza building, which housed several garment factories (including Zara, Walmart, and Primark), a bank, and shops, collapsed, leading to the deaths of over 1,100 workers and injuring more than 2,500 others (Campaign, 2024). The tragedy not only exposed severe safety violations but also the exploitative labor conditions for these workers in the global garment industry. The widespread outrage of this catastrophic event led to significant changes in safety regulations and labor practices, as well as increased scrutiny of supply chains by international brands and consumers. In response to the event, Bangladeshi unions created legally binding agreements with global brands to continue their promise of improved safety standards and the necessity for stringent oversight to protect workers' rights and

lives. Along with the Bangladeshi unions, other governments and international organizations have become increasingly focused on regulating this sector of sustainable and ethical fast fashion practices. For instance, as discussed in Berkeley Law's article on fast fashion legal threads, initiatives such as the Fashion Act in New York have proposed to hold fashion companies accountable for their environmental and social impacts by requiring them to disclose their supply chains and labor practices (Desai, 2023). This act allows for more transparency and responsibility in the fashion industry and for their consumers, pushing companies towards more sustainable and ethical operations within their work environment (Ross, 2021). By implementing these regulations, governments can work to drive the industry towards more responsible practices and ensure that fashion companies contribute positively to both the environment and society.

2.1. SUCCESSFUL POLICIES

Several government regulations and initiatives have shown positive results in steering the fashion industry towards more sustainable practices. The European Union's Circular Economy Action Plan has been particularly effective in shifting the focus of fashion brands toward designing products with their entire lifecycle in mind. By setting stringent guidelines for design and production, the EU has managed to push companies towards reducing waste and incorporating more sustainable materials. Similarly, France's Anti-Waste Law has proven successful in reducing the destruction of unsold goods, leading to a significant decrease in textile waste (Riemens et al., 2021). Companies are now more inclined to recycle, donate, or repurpose unsold items, which has not only reduced waste but also encouraged more sustainable production practices. Additionally, Extended Producer Responsibility (EPR) schemes in countries like the UK and Japan have shown promise in making companies more accountable for the entire lifecycle of their products. These initiatives have led to increased use of eco-friendly materials and better waste management practices (Riemens et al., 2021), pushing the fashion industry towards a more circular economy.

2.2. UNSUCCESSFUL POLICIES

While the Bangladesh Accord on Fire and Building Safety has improved working conditions in many factories, enforcement remains inconsistent, and many workers still face unsafe conditions (Amurao, 2021). The rapid pace of fast fashion production undermines these efforts, as companies continue to prioritize speed and low costs over sustainability and ethical labor practices (Amurao, 2021). Another challenge is the issue of greenwashing, where companies make misleading claims about the sustainability of their products. Despite efforts to regulate green labels and logos, many consumers still remain confused or misled, which undermines trust and slows progress towards true sustainability (Igini, 2022).

2.3. RECOMMENDATIONS FOR GOVERNMENTS

To best address the challenges associated with the fast fashion industry, governments should consider implementing more enforceable regulations that leave little room for loopholes or non-compliance. First, they should enhance the enforcement mechanisms of existing regulations, ensuring that companies are held accountable for both environmental and labor practices. This could include more frequent inspections, higher penalties for non-compliance, and public disclosure of violations to increase transparency. Second, there should be a stronger focus on combating greenwashing by standardizing sustainability labels and providing consumers with

clear, accurate information about the products they purchase. This could be achieved through a combination of legislation and public awareness campaigns. Finally, considering the success of the EU's Circular Economy Action Plan and France's Anti-Waste Law, governments should consider adopting similar models, with an emphasis on reducing waste, promoting recycling, and transitioning towards a circular economy in the fashion industry.

3. LABOR PRACTICES IN THE FAST FASHION INDUSTRY

Labor practices in the fashion industry have been under continuous scrutiny for decades, particularly surrounding child labor and factory conditions. One of the most alarming aspects of these practices is the prevalence of sweatshops, where workers are subjected to extremely poor working conditions, low wages, and long hours. In many cases, the working environments are hazardous, with insufficient safety measures, inadequate ventilation, and exposure to harmful chemicals (Amurao, 2021). With the lack of laws overseeing labor regulations in countries like Vietnam, India, and Bangladesh, children as young as 10 years old are employed in these garment factories and forced to work long hours with little pay (Amurao, 2021).

Many companies choose to create their garments in low-cost regions to avoid high costs and maximize profits towards the fast fashion industry. However, brands typically distance themselves from the direct management of factories, potentially to avoid the responsibility of being associated with the unethical practices. In Bangladesh, the minimum wage for garment workers is around 11,350 Bangladeshi Taka (approx. 95 US Dollars in 2024) per month, which is insufficient to cover basic needs such as food, housing, and healthcare (Li et al., 2014). Out of the 75 million factory workers in the fast fashion industry, over 98 percent do not make a living wage (Li et al., 2014), leading them to be under the poverty line and considered slave labor.

Non-government organizations such as The International Labor Organization (ILO) advocate for workers' rights and better working conditions (DeFalco et al., 2018). The ILO estimates that there are around 170 million child laborers worldwide, many of whom are employed in the fashion and textile industry. These children are often engaged in tasks such as cotton picking, sewing, and dyeing fabrics, which are labor-intensive and harmful to their health. The ILO has called for stricter enforcement of labor laws and greater efforts to remove children from these exploitative environments (Speed, 2021) in their Code of Practice, which presents obligations for the fashion industry's work environments, ethical labor practices, and safety precautions.

Consumers also play an important role in perpetuating unfair labor practices in the fast fashion industry. The demand for cheap, trendy clothing drives the industry to prioritize speed and cost over ethical considerations. Efforts to increase transparency to consumers have been created through movements such as Fashion Revolution's "Who Made My Clothes?" campaign (Campaign, 2024). The campaign began in response to the Rana Plaza disaster and showed first-hand the poor working conditions and lack of accountability within the fast fashion supply chain. Fashion Revolution asks people to use social media to directly ask brands, "Who made my clothes?" This simple yet powerful question is meant to pressure companies to reveal the conditions under which their products are made and to advocate for fair wages, safe working environments, and sustainable practices. Not only does the movement raise awareness among consumers, but also pushes brands to take responsibility for their supply chains. This has caused millions of people to participate in the movement by sharing photos of their clothing tags and participating in discussions about the fashion industry's impact on workers and the environment (Igini, 2022).

Labor rights are closely aligned with broader global inequality. Allowing exploitative practices of child labor and unfair wages to continue will only cause the industry to perpetuate a cycle of poverty in the regions where workers have few alternatives. These practices also undermine local economies, as the focus on low-cost production in certain regions can crowd out domestic industries that might offer better wages and working conditions. If companies are held accountable for their supply chains, they are more likely to invest in fair labor practices, both to protect their brand reputation and to meet the demands of a more socially conscious market.

While the ILO and other organizations can help advocate for better labor practices, there is a need for stronger international agreements that mandate fair wages, safe working conditions, and the elimination of child labor. Countries and companies must be held accountable through binding agreements that have real consequences for non-compliance. Governments in producing and consuming countries should work to enforce stronger labor standards such as stricter oversight of factories and sanctions against brands that do not meet proper labor standards. Rather than choosing not to participate in the production of the garment process to avoid responsibility, companies should work to take ownership of the entire supply chain; whether through direct partnerships with factories or transparency reports that detail working conditions and wages.

4. SUSTAINABLE PRODUCTION EFFORTS

Efforts to mitigate environmental impacts include the adoption of closed-loop systems that recycle water and chemicals in textile processing. The ZDHC (Zero Discharge of Hazardous Chemicals) program, for instance, aims to eliminate hazardous chemicals from the supply chain by promoting sustainable chemical management practices. Clothing production, distinct from textile manufacturing, involves the assembly and finishing of garments. The trend of decentralizing production to numerous factories worldwide has led to increased waste and carbon emissions due to transportation and overproduction. Fast fashion brands, known for their rapid production cycles, have been major contributors to this issue. Companies are beginning to adopt more sustainable production models. Patagonia, for example, emphasizes quality over quantity and offers repair services to extend the lifespan of their products. Additionally, some brands are experimenting with on-demand production to reduce excess inventory and waste.

The production of fabrics and textiles is also a major contributor to the fashion industry's environmental impact. Conventional textile production involves high water usage, chemical dyes, and synthetic fibers that contribute to pollution and microplastic contamination. Compared to the 2000's fast fashion industry, companies have started to produce over twice the number of clothing collections and continue to increase by 2 percent (Niinimäki et al., 2020). According to a research study done on *The Environmental Price of Fast Fashion*, "In the USA, the average consumer now purchases one item of clothing every 5.5 days, and in Europe, a 40 percent increase in clothing purchases was observed during the period 1996–2012" (Sandin and Peters, 2020). Since 2005, fast fashion's rapid pace of trends and clothing production has caused the average consumer to decrease their "average-garment" use time by 36 percent (Sandin and Peters, 2020).

In response to the amount of unsustainable fabric consumption reaching an all time high, sustainable alternatives such as organic cotton, recycled polyester, and innovative materials like mushroom leather are gaining traction (Nathan, 2024). With cotton being one of the most used clothing materials globally, it poses major issues environmentally with the amount of insecticides used to produce cotton. Sustainable materials made from those of organic fibers, recycled

fibers, and raw materials have helped create more environmental efforts towards the fashion industry as they do not use chemicals in production and prevent soil erosion (Kaya, 2023). Sustainable fashion should not just be taking into account the fabric or wearing of the clothing but rather the whole life cycle and all its stages – design, manufacturing, retail, use, and disposal. As companies continue to make more sustainable choices within the fast fashion industry, they can continue to inspire many other brands in the world to adopt the same sustainability principles.

4.1. HISTORY OF ENVIRONMENTAL CONCERNS

Over the past 30 years, the fashion industry has witnessed a significant shift towards sustainability. In the late 20th century, environmental concerns were largely overlooked. However, growing consumer awareness and scientific evidence of the industry's impacts have spurred changes. The infamous Chicago textile fire of 1910, while over a century old, serves as an early example of the need for stringent safety and environmental regulations. The fire not only claimed the lives of many factory workers, but also brought to light the dangerous situations these workers were in and the lack of oversight in a factory that had long been a concern in the fashion industry. Although this tragedy is more closely associated with worker safety than environmental sustainability, it still shows the broader systemic issues that have historically been neglected in the pursuit of profit of these major companies.

Starting in the late 1960s, fast fashion became increasingly popular. New trends were created rapidly as clothing was used as a form of one's expression. The demand for affordable clothing and mass production at a fast rate led to more textile mills taking over areas across the country. In the 1990s, the term "fast fashion" became known through the New York Times as an idea a designer had to being sold in store in the span of just 15 days. If that was not fast enough for society, online shopping took fame in mid 1990s where an already increasing rate of textile use became even faster and more demanding. According to an article by Ocean Generation on the history of fast fashion, 70 million barrels of oil are used annually to create the polyester fibers in clothing. Additionally, the average person typically consumes roughly 25 pounds of textile fabrics each year (Generation, 2023).

The environmental costs of fast fashion became relevant towards the end of the late 20th century with the use of synthetic fibers, such as polyester, which are derived from fossil fuels, contributing to an estimated pollution of 2.1 billion tonnes of greenhouse gas emissions by 2018 (Generation, 2023). These materials are non-biodegradable, leading to long-term environmental impacts. Additionally, the dyeing and treatment processes involved in textile production release harmful chemicals into waterways, affecting human health and ecosystems (United Nations Environment Programme, 2022).

While some companies have made significant strides towards environmental sustainability, others have been accused of making misleading claims about the environmental benefits of their products. One famous company in the fast fashion industry that has been exposed for greenwashing is H&M. H&M claimed to only use recycled and "50 percent sustainable materials", which appeared that they were making more environmentally conscious efforts. H&M encourages consumers to recycle and make environmentally friendly choices, yet it reportedly produces around 3 billion garments annually (Igini, 2022). This has raised concerns that such practices may lead consumers to purchase more than they need under the impression they are making sustainable choices, potentially exacerbating environmental impacts. While this effect may not have been fully quantified, it still shows the need for greater transparency and accountability in

sustainability claims.

To address the environmental concerns associated with fast fashion, the industry must move beyond superficial changes and embrace a more holistic approach to sustainability. This includes not only adopting environmentally friendly materials and processes but also rethinking the entire lifecycle of clothing – from production, to consumption, to disposal. Furthermore, there must be greater accountability taken with major companies, with stricter regulations to ensure that companies follow through on their sustainability commitments.

5. THE FUTURE OF FAST FASHION

Today, sustainability is a central focus for many fashion brands. Looking to the future, advancements in technology and materials hold promise for further reducing the industry's environmental footprint. Innovations such as biodegradable textiles and digital fashion (virtual garments) could revolutionize sustainable practices. Additionally, balancing the profitability with environmental responsibility remains a challenge for the fashion industry. Companies must navigate consumer demand for affordable fashion while minimizing their ecological impact. Success stories like Stella McCartney, known for her sustainable luxury fashion, demonstrate that profitability and sustainability are not mutually exclusive.

6. FUTURE EFFORTS NEEDED FOR ENVIRONMENTAL SUCCESS

To continue progress, the industry needs certain regulations that promote sustainability across the supply chain. The success of the EU's Circular Economy Action Plan suggests that similar frameworks could be effective globally. Additionally, creating more transparency and accountability within the fashion market is crucial. Fast fashion companies can lead through using more sustainable packaging, reducing carbon emissions through localized production, and promoting of circular fashion models.

The environmental cost of fast fashion goes beyond the well-documented greenhouse gas emissions and waste. An urgent, though less studied, threat is the problem of microplastics born from synthetic fabrics such as polyester, which when washed in water shed microplastics. The small microplastics can fall into the ocean, introducing dangers for ocean ecosystems and humans (European Environment Agency, 2022). The area demands more awareness-raising, funding toward more research on substitutes for synthetic fibers, and more sophisticated filtration methods so that plastics do not find entry into water streams. Governments can also promote the use and installation of filters in washing machines that collect these toxic particles.

Additionally, many discussions neglect the energy-intensive digital infrastructure supporting the fast fashion industry's e-commerce platforms, from server farms to data processing. Another critical area is the post-consumer phase, where consumers often discard clothing to landfills, despite efforts to promote consumer recycling. True sustainability extends beyond production and consumption, addressing these less visible contributors to environmental degradation, and further quantitative research is needed to evaluate sustainability needs in these areas.

7. CONCLUSION

The demand for fast fashion has only increased to meet consumer wants for cheap, trendy clothes mirroring the ever-changing landscape of fashion. But the price remains heavy on the environ-

mental and human elements in the production chain. Steps towards sustainability have been recently made, but there is still much to be done before attaining a sustainable fashion industry. Government regulations and company-led initiatives managed to bring into the spotlight concepts such as circular fashion, responsible production practices, and sustainability metrics; still, much work remains to be done.

Currently, the end-of-use phase of clothes is not well-addressed. A majority of these clothes, tagged “sustainable,” are ultimately discarded in landfills (Niinimäki et al., 2020). There are two ways in which efforts can be made to include the total cycle of a clothing garment. For one, educational campaigns can encourage consumers to buy less clothes with stronger quality to prolong the lifespan of garments. Alternatively, companies should adopt take-back programs and investments in recycling infrastructure to prevent more textiles from landing in the landfill.

Transparency is an element of truthfulness that customers now seek for in their sustainable fashion future. Brands are gaining trust through easy and verifiable access to knowledge about supply chains, labor practices, and environmental impacts. However, the practice of greenwashing has indeed been a problem in this industry, making consumers believe choices are environmentally friendly while most of the brands do not keep their word. In order to fight against that, brands should be transparent and honest while providing verifiable statistics, so consumers could make more informed choices and regain trust in the industry.

Labor rights are another domain of the fast fashion industry that should be considered. Despite initiatives like the Bangladesh Accord on Fire and Building Safety, most labor initiatives still find garment workers exposed to exploitative working conditions. This is because fast-fashion brands avail themselves of the outsourcing production in low-cost countries, bypassing regulations, turning a blind eye to unsafe working environments. True sustainability cannot come without fair treatment of labor and the elimination of systemic inequality, which enables the exploitation of the same. Consumers, as citizens of the world, have a responsibility to demand more from the brands, and consumers should support only those companies that adhere to fair labor practices. More effective implementation of labor laws by governments, NGOs, international bodies, and a voice for workers are necessary to hold these companies accountable for the kind of conditions they have to face.

The future of fashion has to be one where it readjusts itself into a practice that is both ethical and sustainable. Developments in sustainable fabrics, such as biodegradable fibers and lab-grown substitutes, open up possibilities for reducing the environmental impact of clothing manufacturing. The new business models, including rental fashion, clothes swapping, and re-selling platforms, can be considered again by the brands while contributing to a reduction in the gigantic volume of apparel produced, disposed of, and contributed yearly. One of the integral ways to make a proper change is by changing the linear “take, make, dispose” to a circular economy where apparels are reused, repurposed, and finally recycled.

Companies can also rethink the future of fashion, by products such as digital fashion. Digital fashion refers to a set of clothes existing only in a virtual form, which can be used by avatars on the web or in social media. The creation and wearing of digital garments lets people express themselves fashionably with only a few garments, reducing physical waste associated with traditional cloth production. Though digital fashion is a new field, it is an exciting opportunity to solve problems connected with overconsumption without giving up on creativity or individuality.

The problems within the fast fashion industry are complex, but they are not insurmountable. Many factors need to be addressed, such as government regulation, company responsibility,

meaningful technological innovation, consumer education, and changing culture, to value quality over quantity in moving toward a more sustainable fashion ecosystem. Governments must act boldly and set environmental standards, be transparent, and hold brands accountable for their claims regarding sustainability. This means that the businesses have to go beyond just being profitable because they affect nature, the labor force, and society.

Ultimately, consumer awareness is central to driving companies towards sustainable practices. Small practices like supporting ethical brands, buying second-hand, and keeping garments in circulation for longer through proper care and repair make a big difference when implemented on a large scale.

While the fashion industry has gained substantial attention from the research community, there are several areas that warrant future research. Firstly, there has not been enough research into how the constant influx of new trends and pressure to keep up with ever-changing styles is affecting consumers' mental health and body image perception. We suspect that fast fashion promotes a culture of disposability that is increasing anxiety, lowering self-esteem, and contributing to related mental health problems. Further studying the psychological effects of the industry might give a deeper insight into consumer behavior and help in developing strategies to increase mindful consumption.

Additionally, research opportunities exist in role of local and indigenous knowledge in building sustainable ways of doing fashion. Sustainable textile production has been practiced for long ages by indigenous communities. Future work can study how traditional methods and materials can be brought into fashion – reducing impacts on the environment while maintaining cultural value. It could be an innovative approach in bringing forward modern technology alongside environmentally-friendly traditional methods.

A third area of research is further attention towards the carbon footprint of the fashion industry through e-commerce. Increased online shopping has made packaging waste, transport emissions, and the energy usage of data a large contributor to the overall environmental impact of the industry (Obadia, 2023). Research opportunities exist towards how e-commerce logistics can be optimized, how packaging waste can be reduced, and how the industry's hidden energy costs can be better understood. Moreover, not enough work has been done to explore the environmental impact of the recycling processes themselves. Recycling is often portrayed as a panacea for dealing with textile waste, but the amount of energy and chemicals used in the actual process of recycling can be environmentally damaging. Further research in this area should be done to assess the sustainability of different methods of recycling and to produce less damaging, more efficient ways of reprocessing textiles. The possibility of small, distributed production models for ecological replacements of large-scale manufacturing will never be addressed. Decentralized, small-scaled production could decrease carbon emission from transport, keep jobs in neighborhoods and increase the contact process of the consumer with producers.

Research into decentralized small-scale production could upturn current fashion models at the benefit of increased sustainability and community welfare. Future research in this space holds promise towards better understanding the complex challenges surrounding fast fashion, and contribute to the development of more effective solutions. Ultimately, it is the complex responsibility of governments, consumers, and companies to transform the fast fashion industry towards a responsible future by addressing psychological, cultural, logistical, and technical aspects of sustainability.

REFERENCES

- AMURAO, I. 2021. The victims of fast fashion. *Center for Girls Foundation*. Accessed: 2024-09-02.
- BANK, W. 2019. How much do our wardrobes cost to the environment. *World Bank*. <https://www.worldbank.org/en/news/feature/2019/09/23/costo-moda-medio-ambiente>.
- CAMPAIGN, C. C. 2024. Rana plaza. clean clothes campaign. *Clean Clothes Campaign*.
- DEFALCO, R., GOODMAN, J., PAUKNEROVA, K., DILLNER, J., AND HAINAUT, P. 2018. Addressing environmental and health risks of fast fashion. *Environmental Health* 17, 43, 1–4.
- DESAI, D. 2023. Ll.m. student deshna desai unravels fashion industry legal threads. *University of California Berkley*. Accessed: 2024-08-07.
- EUROPEAN ENVIRONMENT AGENCY. 2022. Microplastics from textiles: Towards a circular economy for textiles in europe. *European Environment Agency Publications*. Accessed: 2024-09-06.
- GENERATION, O. 2023. The history of fast fashion. Accessed: 2024-09-13.
- HSU, C.-H., CHANG, A.-Y., ZHANG, T.-Y., LIN, W.-D., AND LIU, W.-L. 2021. Deploying resilience enablers to mitigate risks in sustainable fashion supply chains. *Sustainability* 13, 5.
- IGINI, M. 2022. 5 fast-fashion brands called out for greenwashing. *Earth.Org*. Accessed: [2024-09-02].
- KAYA, Ö. 2023. Collections made with sustainable fabrics: Sustainable fashion-environmental sensitivity. *Sanat ve Tasarım Dergisi* 31, 111–128.
- LI, Y., ZHAO, X., SHI, D., AND LI, X. 2014. Governance of sustainable supply chains in the fast fashion industry. *European Management Journal* 32, 5, 823–836.
- NATHAN, G. 2024. Mushroom leather? the future of fashion is closer than you think. *National Geographic*.
- NIINIMÄKI, K., PETERS, G., DAHLBO, H., PERRY, P., RISSANEN, T., AND GWILT, A. 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment* 1, 4, 189–200.
- OBADIA, L. 2023. Mitigating greenwashing practices in the fashion industry: Assessing the effectiveness of the new eu green claims directive a case study of primark. *sustainability*.
- RAMASUBRAMANIAN, B., REDDY, V. S., PAUL, P., DALAPATI, G. K., AND RAMAKRISHNA, S. 2024. Extended producer responsibility practices and prospects for waste management in japan. *Sustainable Chemistry One World* 2, 100009.
- RIEMENS, J., LEMIEUX, A.-A., LAMOURI, S., AND GARNIER, L. 2021. A delphi-régnier study addressing the challenges of textile recycling in europe for the fashion and apparel industry. *Sustainability* 13, 21.
- ROSS, E. 2021. Fast fashion getting faster: A look at the unethical labor practices sustaining a growing industry. *International Law and Policy Brief*. Accessed: 2024-09-02.
- SANDIN, G. AND PETERS, G. M. 2020. The environmental price of fast fashion. *Nature Reviews: Earth & Environment*.
- SPANI, R. C. 2020. The new circular economy action plan. *FEEM Policy Brief* 09-2020.
- SPEED, A. G. 2021. Impact of fast fashion and international law on workers and the environment. *sustainability*.
- UNITED NATIONS ENVIRONMENT PROGRAMME. 2022. The environmental costs of fast fashion. *UNEP*. Accessed: 2024-09-02.