
The Global South as a Wasteland for Global North's Fast Fashion: Ghana in Focus

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Abstract: Fast fashion has transformed the way we buy clothing from an occasional thing to an everyday routine, especially in the Global North, in the last two decades. Thanks to technological innovations, such as online shopping and home delivery, people can now buy inexpensive and low-quality clothing produced in mass quantities and moved to stores to meet the growing consumer demand. The insatiable consumer demand for new clothing has caused production to soar with infiltration of imitation and poor-quality clothing. But the more people buy clothing the faster the rate at which they reject the older ones. These often-poor-quality cast-offs, which are collected under the guise of charity by non-profit organizations, find their way in Global South, where they wind up as waste. Using Ghana as a case study, this paper aimed to systematically review how the fast fashion craze of the Global North is compounding the already distressed waste situation in Global South. The study adopted narrative and analytical approach to investigate previously published literature shortlisted following a thematic and chronological arrangement. While fast fashion may be heralded in Global North as a good business model, the findings of this review indicate that 40% of every bale of secondhand clothing (equivalent to 4 to 6 million pieces of garment per week) that land in Global South are thrown away as wastes, resulting in an environmental injustice situation in which those who are not directly responsible for fast fashion are disproportionately bearing the environmental burden associated with it. The basis upon which reforms, such as a return to slow fashion and other sustainable measures suggested in this study are urgently required.

Keywords: Fast Fashion, Second-Hand Clothing, Waste, Global North, Global South

1. Introduction

Fast fashion refers to a fast business model that promotes inexpensive, low-grade clothing made quickly in mass quantities and moved fast from production to retail shops to keep up with the trend in consumer demand [1-4]. The business model of fast fashion thrives on frequent consumption and impulse buying, which have been made more feasible by the advent of technological innovations, such as online shopping and fast delivery means [1, 4-7]. Magazines and social media presence create a sense of “must haves” that fuels the insatiable demand for new clothes, especially among women. Consumers can now buy clothes for less money, easily, and at a faster rate, and shopping has also become a pleasure and trendy. [1, 8, 9]. Purchasing clothes is now easier from the comfort of our homes. Also known to promote fast fashion, is the so-called collaborative management (CM), an innovative approach that has led to a

shift in the traditional transactional approach to one that ensures supply-retail collaboration and cross functionality [10].

Clothes buying has transformed over the past two decades from something that used to happen occasionally when our clothes were worn-out to an everyday thing. [7, 9]. The phenomenon has become a prominent business idea that offers enormous amounts of apparel for cheap, causing clothing consumption to soar with corresponding increase in production. Textile production is reported to have almost doubled the rate before the 2000s, and it is estimated to grow further at 2% each year [7-9].

As a result of that, an estimated 80 billion new pieces of apparel are bought worldwide every year, amounting to \$1.2 trillion averagely for the global fashion business, with an average growth of 4.3% since the year 2000 [1, 3, 9, 11]. The world now consumes an estimated 62 million tons of clothing annually, and by 2030, that number is expected to climb to

102 million tons. In the USA for example, the average consumer purchase is rated at one item of clothing every 5.5 days [7].

Consequently, textile production has seen an astronomical increase. The \$2.5 trillion global fashion industry produces about 14 garments every year for every single person on the earth [12]. While this may be heralded as good for the fashion business, on the other hand, there is a high environmental price to pay.

The fast fashion industry has come under enormous criticism for its negative impact on the environment. While the environmental impacts and social crisis associated with the boom of this fashion craze has been assessed, it is not thorough enough to cover the post-textile production. A few researchers have only focused on the global environmental impacts that arise at the various supply chain of textile production – CO₂ emission, water use, wastewater from dye and chemicals use, and textile waste [7]. The post-textile production waste arising from second-hand clothing in low-income countries has not been fully studied. A few studies have also examined the impacts of second-hand clothing on local textiles and local economies [13-16] without attending to the more urgent attention-needing environmental consequence of second-hand influx into these countries.

However, disguised as charity to raise funds for NGOs, are tons of textile waste from Global North, that ends up in Low-Medium Income Countries [17], like Ghana as 'broni wawu' (meaning dead white man's clothing) or second-hand clothing (SHC). Low-income countries in Africa have, thus, become the final destinations of the largest quantities of second-hand clothing or clothing castoff from the Global North. This has paved the way for waste clothing to be dumped on already burdened Africa, giving rise to what the UN termed in 1989 as "waste colonialism – Global North's accessing of lands of Africa for inexpensive waste disposal".

Ghana is one of the most popular destinations for second-hand clothing, with about 90% of its population relying on SHC [13, 16]. Using Ghana as a case study, this review seeks to analyze the contribution of fast fashion to waste in Africa resulting in "environmental injustice" so that there can be basis for reforms, locally and globally. Being the largest second-hand clothing importer in West Africa with arguably the largest second-hand clothing market in the world means that Ghana's situation could have implications for the rest of Africa. The review draws on relevant existing literature on the theme. The review attempts to answer questions regarding the dynamic of the global fast fashion industry, the current scientific finding on global environmental impacts, the second-hand clothing trade network, and the disproportionate burden of global second-hand clothing waste in Africa, with a focus on Ghana.

2. Methodology

This literature review was carried out using two main steps:

1. search for existing literature for the studies from

databases following a set of rules to shortlist literature relevant to the topic of studies.

2. Matching contents to identify common themes in the shortlisted literature by following a set of questions. In step 1, I entered keywords, such as "fast fashion", "fashion waste", "second-hand clothing", in google scholar, ScienceDirect, and UIS library resources databases to fish out related articles. I also looked up to some references cited in my identified literature to select some that were relevant to my topic. To ensure that I do a comprehensive review, I search for other supplementary material from online publications that relate to my study topic. The set of rules that I applied in this step ensured that the selection of studies was not limited to only peer-reviewed papers. Among other things, the step allowed for the:

- 1) selection of studies on any form of textile fashion.
- 2) inclusion of studies which report both quantitative and qualitative results.
- 3) Exclusion of studies conducted before 2010.
- 4) In step 2, the content mapping was executed following a set of questions, including but not limited to the following:
- 5) What the aim of the studies is?
- 6) What questions are being answered?
- 7) What methodology is used?
- 8) Does the study look at the environmental impact of fashion?
- 9) Is there a geographic scope to the study?
- 10) What were the main conclusions and recommendations?

3. Discussion

3.1. Global Environmental Impacts of Fashion

Niinimäki et al., 2020 have well documented that at each stage of clothing production, there are some environmental impacts – from the amount of water and chemical consumed during textile production to the levels of CO₂ emissions during the manufacture, distribution, and consumption of clothing.

Water footprint: In 2015 alone, the fashion industry consumed close to 80 billion cubic meters of water for global textile production, averaging about 200 tons of water for a ton of textile produced. That does not include the water consumed for cotton growing [1, 9]. Another 44 trillion liters of water is used for irrigation by the textile industry annually. That represents about 3% of the world's irrigation water use [7].

Carbon footprint: Textile production uses a significant amount of energy from fossil fuels. It is responsible for about 10% of global greenhouse gas emissions (GHG). A Conservative estimate done in 2016 indicates that 8.1% of global CO₂ equivalent emissions came from the textile industry [7]. Some more GHG emissions result from the burning of textile waste on landfill sites. However, there is an absence of data to provide an estimate of GHG emissions from burning textile waste. A new framework has been developed with a focus on product reuse. It has shown potential to

optimize integrated solid waste management to mitigate the impact of second-hand waste and enhance the recovery of products for reuse. The method has been shown to reduce GHG emissions resulting from burning disposal products. [18].

Chemical use: The manufacturing process of the textile industry uses a large number of different chemicals, over 15,000 different chemicals, a lot of which end up as pollutants in water bodies, putting people's health at risk. 6% of global pesticide production is applied to cotton crops alone. The large amount of water and chemicals consumed by the industries for textile treatment and dyeing constitute 20% of industrial water pollution, including 35% of microplastic pollution in the ocean [7].

Textile waste: The dramatic increases in fast fashion production and consumption volumes have increased the two kinds of textile waste. Overall, the industry produces more than 92 million tons of waste yearly, most of which wind up in landfills or are flared, generating more harmful emissions.

1. Production waste is waste produced during the manufacturing of textiles and garments. It is estimated that 15% of the fabric used in garment manufacturing is wasted, including fabric waste. Many variables impact this waste percentage. A conservative estimate places textile waste during garment manufacturing at 25–30%. Production waste increases with the increasing output of global fashion [7]. It is possible to decrease the amount of production waste should production be made more accurate. A review drawing comparison between two research domains (cutting and packaging C&P, and zero-waste fashion design, ZWFD), both of which seek to reduce fashion waste from varying perspectives, shows that 76.02% of fabric utilization was achieved when the two models are applied together in fashion [19]. However, this remains only a model. There is no data to confirm this in actual fashion production.
2. After-production waste is consumer-discarded garments. Nearly 60% of the 150 billion garments produced globally in 2012 countries were included in post-production waste. Between 1999 and 2009, for instance, there was a 40% increase in textile waste in landfills in the USA because of shorter garment lives and rising consumption. Estimates show that up to 22% of all mixed garbage globally is made up of textiles [7]. In most cases, consumer-discarded clothing is collected by recyclers for reuse or NGOs in Global North for exportation to Global South, where it finally ends up as waste.

While the social impact associated with fast fashion is not the focus of this review, it is worthy of highlight for further research. In the quest to produce cheap and low-quality clothing to meet the increasing consumer demand, manufacturers have resorted to employing cheaper labor including vulnerable groups, such as children and women, who are exploited over their wages, rights, safety, and health [11, 20]. Thus, fast fashion, besides the environmental threats, raises moral concerns and calls for social justice.

3.2. Reuse and Recycling as Sustainable Option

It is obvious from the above data that we are paying a huge environmental price in the name of fashion, with the situation potentially getting even worse given the current state of the fashion industry. This has attracted the attention of several researchers who have explored the option of extending the life of clothes through reuse and recycling. In Global North, reuse and recycling are seen as sustainable means of tackling the environmental impacts of fashion as they lead to reduction in the production of new clothing [21, 22]. Even recyclers and Charity organizations involved in the collecting, sorting, and selling of used clothes pride themselves as promoters of sustainable fashion [23, 24]. They often assume that textile recycling has no or less environmental footprint. Sadin and Peters, 2017 in their review of textile reuse and recycling, argue that circulation and reuse do not work under all scenarios due to the different recycling routes. The benefit may only arise when the production of new products stops and when a combination of reuse and recycling routes are considered [25]. While second-hand clothing may play a role in circular economy (CE) and help reduce the environmental and social impacts of fast fashion, the lack of profitability with second-hand clothing circulation makes production of new clothing more preferred [26].

d'Arnaud & Boeckholtz, 2020 also followed an object of used clothes from the Netherlands to Ghana, tracking the fate of clothing at every stage of the second-hand supply chain from collection, sorting, and collection. They found that the "circularity" and the "sustainable" idea are true only at the supply end of the chain and that the receiving end is excluded from any environmental benefit. Circulation and reuse have become a means to shift the environmental burden from Global North to Global South. Therefore circulation/reuse is only sustainable to GN but harmful to GS. They conclude that the self-tag by recycling companies and NGOs as leaders in promoting sustainable fashion is only to suit their corporate image. Other factors that do not make reuse and recycling sustainable include the inability of current technology to transform unwanted materials into fiber that can be used to make good new cloth. In addition, the methods of recycling, such as shredding and chemical digestion do a poor job, and the markets to absorb the large volume of materials from recycling are not large enough [17].

3.3. Second-Hand Export: Global Context

The fast fashion model encourages consumers to view clothes as disposable and not to be reused since new products and attractive designs are produced every day. Therefore, if not discarded, used clothing are donated to recyclers and non-profit organizations [17]. These organizations collect large volumes of used clothing from consumers in developed countries and sell them to raise funds for charity work [14, 15]. Since they receive the disposed clothes at no cost, they tend to accept even torn, worn-out, soiled, and waste clothing. They tend to be more interested in adding value to the clothing for

profit than to make losses. This results in poor sorting since that process is labor and capital-intensive [24]. According to Manson & Ferrero-Regis, 2021, Second-hand clothing loses its value once the western users dispose them off. By the time the SHC enters the global export market, value is then added to profits, even by non-profit organizations that come under the pretense of charity. Only 10% of donated clothing is retailed locally in Global North markets. The rest that doesn't get sold are packed into bales and shipped most from the United States, UK, Canada, and Germany to Global South [15, 17, 27]. This is a convenient way by which charity organizations pass down clothing that are not bought in Global North to Global South [28]. In recent years, textile manufacturing has largely been offshored to Asia, especially China [5, 6], and some developing countries [11], but that has not changed the dynamics of exportation of second-hand clothing to Africa.

Oxfam is an exporter of second-hand clothing, and it primarily exports second-hand clothing to west African countries - Benin, Gabon, Ghana, Senegal, and Togo. A typical import data of Oxford stands as follows: 50% to West Africa, 25% to Eastern Europe, and 25% to the Middle East [17]. Since 1990, the trade has grown tenfold and is worth about \$1 billion per year, representing less than 0.5% of the \$200 billion total global trade in textile and clothing [9]. Another study estimates the SHC values at 0.6% of the total trade in new cloth [14]. In volume terms, the proportion is higher, since SHC sells at around 10–20 percent of the price of new clothes. However, this proportion varies considerably according to the receiving country [13]. Nearly 500,000 tons of second-hand clothing that arrive in low-income countries come from the United States alone each year, and the majority wind up in West Africa. In total, about 64.5% of second-hand clothing exports are absorbed by developing countries [14]. As far as Global North is concerned, the second-hand business is a sustainable practice since it keeps clothes in circulation. Unfortunately, the poor-quality of clothing that continues to be shipped to GS raises serious social and environmental justice questions.

Unsold clothes in the markets due to their poor quality are deemed waste and dumped, sometime at unapproved places, ending up polluting rivers, greenways, and parks, creating the potential for additional environmental health hazards in

LMICs lacking robust municipal waste systems [9].

3.4. Regional Context: Sub-Saharan Africa

Even though the global trade in second-hand clothes is very minor, the trade is more significant in some nations than it is in others. Sub-Saharan Africa is dependent on imported used clothes for economic reasons [13]. Manieson and Ferrero-Regis, 2021 in a more recent report suggested that African countries continue to be major destinations for low-quality second-hand clothing imported from Global North. They attribute Africa's "colonial dependence" to the lack of transparency, equality, and balance between GN and GS in the second trade.

In sub-Saharan Africa (SSA), Ghana, Benin, Tanzania, Kenya, and Uganda, are among the most popular importers of second-hand clothing. On average, each of them imports between 2% and 4% of the world's total exports of used clothing. All together, they represent 62% of the sub-Saharan total share of second-hand clothing imported between 1999 and 2003. On average, 40% of SSA's imports go to West Africa [14]. Later reports by Brooks, 2013 show an increasing trend in exports of clothing to the above listed countries, with 50% of the total quantity going to West Africa. Studies on second-hand clothing in Africa have focused largely on second-hand trade and its economic impacts on local businesses, especially on the textile industry in Saharan Africa [13-15].

There are, however, no records of second-hand clothing waste in SSA. Therefore, this review examines the situation in Ghana. As the largest importer of second-hand clothing in SSA, an assessment of Ghana's situation would have direct implications for the rest of SSA.

3.5. Country Context: Ghana's Katamanto Market

Ghana is not just the largest importer of second-hand clothing in sub-Saharan Africa [14], but located in its capital city, Accra, is the Katamanto market, the largest second-hand clothing market in the country and arguably the whole of west Africa [12, 28, 29]. Indeed, fashion blogger, Pistor 2022 also argues that Katamanto is the largest second-hand market in the world. In 2019 about 63.5 million kilograms of the SHC came to Ghana from the UK, Ghana's Colonial masters [29].



Figure 1. Katamanto market in picture with second clothing on sale.

Source: Fashioning Waste: Considering the Global and Local Impacts of the Second-hand Clothing Trade in Accra, Ghana and Charting an Inclusive Path Forward (Skinner, 2019)

Bales of second-hand clothes arrive on the market in containers (about \$95,000 per container). Some importers choose to sell the garments themselves or sell the bales to local retailers to sell them. The trade involves gambling as one cannot tell if they are getting trash or treasure until they go and open the bales. The vendor then sorts the parts of the bale into piles of sellable items and heaps of rubbish items. Good enough items are displayed and sold in shops [27]. At the end of the day, many of the unsold things are packaged up and carried in packed trucks to landfills [12]. The cyclical process goes on every day of the week except for Sundays when most shops are closed [27]. About 15 million garments are received into the market every week [12].

3.6. Waste Colonialism

Africans are officially free from white colonial rule. However, it appears the dominance of white supremacy and colonial ties have only taken a different shape. The westerners are no longer in direct control of African territories. This time around, it is their used clothes that are subduing Africa. An Akan expression “Obroni Wawu”, stands for “Dead White Man’s Clothes”, and is a common term used in Ghana for second-hand clothing. The phrase is a signal of the colonial legacy [24] but it is also from the idea of excess clothes collected from the white people who must have died (DeadWhiteMansClothes.org). When Global North posits to be donating second-hand clothing to the South, it must be perceived as a convenience for them and not favoritism to Global South. Because “the value in the act of donation lies within the consequence of that donation,” according to d’Arnaud & Boeckholtz, 2020. The lack of awareness of these consequences continues to form a supremacy mindset in the way the North deals with the so-called donation to poor countries [24].

Under the guise of charity, donated clothes (most of them waste, torn, worn out, or soiled) from the global north are dumped on poor countries like Ghana. Despite all the hard

efforts made by Ghanaian market sellers to put life back into these dead white man’s clothes, a chunk of them would not revive. About 40% of the “obroni wawu” that is received in the market is abandoned as waste. That translates into some 4 to 6 million garments that get dumped every week in distressed municipal landfills that are already overflowing their capacity [12]. This quantity of waste is part of the estimated 2200 tons of solid waste reportedly dumped every single day in Kpone and AcaRP landfills from Accra City alone [30], even though the exact proportion of dumped clothing is not estimated. These dumpsites lack methane capture services and are poorly managed, resulting in open conflagration, generation of toxic fumes, and GHG emissions into the air. The inadequacy of waste services has made waste management (collection and disposal) expensive. To avoid these charges, a chunk of the waste (one-third of the total) does not make its way to the landfill site, resulting in illegal dumping at unapproved places from where they get washed into the city’s lagoon and gutter, ending up in the ocean and creating problems for fishermen [12, 27, 30].

The situation has cascading effects on the environment, public health, and the livelihood of women who retail the clothes at to sell only to end up throwing a lot of them away as waste, and the local fishermen whose outboard motors break down as they get entangled with waste clothes in the sea. In a recent review of the solid waste management system in Accra, Ghana, Mudu et al, 2021 indicate that the capital city’s waste system is overstrained, a situation that is widespread in all developing countries due to the increasing waste generation associated with rapid urban development and population growth. Hence, the fast fashion menace puts additional pressure on the already distressed waste system, creating more public health concerns, and increasing the demand for improved and adequate waste management system. The situation can get even worse because, the the current trend indicates that as fast fashion grows the quality of the imported SHC also decreases.



Source: The OR Foundation.

Figure 2. A mix of second-hand clothing and other solid waste in a municipal landfill site in Ghana.

Indeed, clothing waste is not produced locally in Kantamanto. It is the culmination of an industry with a global market value of 2.5 trillion dollars, which annually generates 14 pieces of clothing for every person on the earth [12]. The necessity for a comprehensive reform would require further research to launch a full-scale assessment of the impact of this

situation on all the affected areas mentioned above including the effect on aquatic and ecological life due to microfiber and microplastic from clothing wastes. A model experiment may also be necessary to predict the future dynamic of the fate of these clothing in the long term. All this information will be essential for reforms, but it is non-existent presently.



Source: The OR Foundation.

Figure 3. 'Dead white man' clothes awash Ghana's beaches.

3.7. Local Challenges to Closing the Loop

Unlike in South Africa and Nigeria where the importation of second-hand clothing is regulated to ensure control of what gets imported into their country [14], the central government of Ghana has no such regulation [12]. In South Africa for example, importers are required by law to obtain permits before they can import second-hand clothing. The country does not permit charitable organizations (such as non-governmental and faith-based organizations) to import second-hand goods into their country. This is never the case in Ghana, so the Central Government has no control over second-hand trade other than taking in a sizeable amount of money from import duties on the clothes. This lack of regulation is not just with the importation of second-hand clothing, but also on all forms of second-hand products.

A study has shown that a large quantity of electronic waste gets infiltrated into the country due to the lack of regulation on the importation of home-used electronic appliances [31]. More research is therefore needed to have a holistic assessment of the impact of all second-hand products imported to Ghana. There are also high unemployment rates in the country, forcing people to go into this second-hand business despite its negative impact on the environment.

3.8. Global Challenges to Closing the Loop

From the analysis of the available information, it appears the most viable option for sustainability is for the world to turn to slow fashion. A slow fashion regime driven by low consumer and low production will lead to fewer unwanted clothing and reduced overall environmental impacts. But will consumers be willing to consume less? And will producers be

willing to sacrifice their profit by producing less? In their review, Bick et al., 2018 suggest trade policy regulation and consumer behavior adjustment to slow fashion. However, another review suggests that attempts by producers to slow fashion and improve sustainability usually cannot keep pace with increasing consumer demand [7]. These two reviews did not report what influences consumer behavior in fashion. Bhardwaj & Fairhurst, 2010 found a link between fashion suppliers and consumers or retailers. They observed that the quick market response to the supply chain management drives production in a way to keep pace with the market demands. They concluded that fast fashion is an approach driven by consumers.

Sorensen & Jorgensen, 2019 used the Q methodology to explore and compare perceptions of Millennials (those born between 1980 and 1995 who they believed have high purchasing power) towards new clothing and used second-hand clothing in the USA. The outcome shows that millennials are generally divided in their perceptions. Significantly, consumers' perceptions were not positive towards second-hand clothing, for varied reasons - second-hand clothing is disgusting, unpleasant, smelly, and unpresentable in stores [32]. This explains why only 10% of used clothing is sold in GN. It also confirms that consumers are unwilling to yield to slow fashion despite being aware of the environmental implication. While this type of investigation is needed to examine consumer perceptions in Global South, another method is needed to confirm this conclusion. A similar study conducted in Norway using a representative sample only determined consumers' motivation for second-hand clothing. For those who preferred second-hand the uniqueness of styles and environmental considerations were their motives [33]. However, the research

fails to quantify the ratio of those who prefer second-hand to those who prefer new clothing.

As discussed earlier, the absence of local regulation on the importation of second-hand products is blamed for the high infiltration of unwanted second-hand products. Another research has found some weaknesses in international regulations on the exportation of second-hand goods. The results from that research reveal that, due to the extended producer responsibility (EPR) programs, which require producers to bear the cost of disposal, firms are reducing reusability and allowing the illegal exportation of unwanted products. Weaknesses in international regulations on importation from GN are said to be paving the way for waste to be smuggled into countries in the south [34]. Brewer, 2019 argues that fashion regulatory laws are often inadequate and fail to protect intellectual property, thereby allowing fake producers to take undue advantage of popular brands by copying popular brand designs and selling them for cheap [35].

4. Conclusion

The review finds that fast fashion is raising consumers' demand for new, cheaper, and readily available clothing, which is disposed-off quickly. The increasing consumer demand has, in turn, pushed textile production rates to almost double over the last two decades. The environmental price of this phenomenon is huge, ranging from large volumes of water use, CO₂ emission, chemical use resulting in pollution, and textile waste. Textile waste includes second-hand clothing that is collected and exported by charity organizations to low-income countries in sub-Saharan Africa. Ghana's Katamanto market is arguably the largest second-hand clothing market in the world. Studies conducted indicate that for every bale of second-hand cloth received in the market, 40% (translating into 4 to 6 million garments per week) is trash and ends up in municipal landfills, with some making their way into the lagoon and the ocean. Out of the total second-hand clothing exported from the Global North 64.5% goes to developing countries. Out of that figure, 26.8% goes to sub-Saharan Africa. While additional regional data is needed to tell a complete story of waste that is dumped in Sub-Saharan Africa through the fast fashion and second-hand clothing trade, the available data suffices for urgent actions.

Mitigating this injustice requires global action across industries, consumers, and local governments. Various suggestions have been made relative to the pathways to sustainable fashion, including recycling and reuse. But that option has been shot down for being ineffective. A more workable solution would be a gradual return to slow fashion by reducing textile production and consumption. In the UK, for example, a minimum of 4% reduction in the consumption of new clothing would effectively reduce clothing waste at twice the current recycling rate [36].

However, several factors have become a stumbling block to progress-making. While suppliers are willing to reduce production over environmental concerns, consumers outpace them in demand for new clothing. What's more, trade

regulations are found to be weak, failing to protect intellectual property, leading to the infiltration of counterfeit brands. There is a need to strengthen international laws to restrict the exportation of unwanted second-hand products from GN to GS.

Additional steps that should be taken to lower fashion waste in Ghana and Africa would require local governments to regulate importation of second-hand clothing into the country. For instance, regulation should permit only a certain amount of high-grade second-hand clothing into the country. South Africa is leading the way in that effort, and the rest of Africa must follow suit.

All things considered; slow fashion is the future. This requires Global North to change in consumer behavior to move from fast to slow fashion. This is essential to reduce the demand for new textile production, resulting in less second-hand clothing and reduced waste. Consumers ought to be educated to be more responsible. While this may take some time to be realized, it is worth starting at some point. Now!

Conflicts of Interest

The author declares no conflicts of interest.

References

- [1] Claudio, L. (2007). Waste couture: Environmental impact of the clothing industry. <https://doi.org/10.1289/ehp.115-a449>.
- [2] Sull, D., & Turconi, S. (2008). Fast fashion lessons. *Business Strategy Review*, 19 (2), 4-11. <https://doi.org/10.1111/j.1467-8616.2008.00527.x>.
- [3] Caro, F., & de-Albéniz, V. M. (2015). *Fast Fashion: Business Model Overview and Research Opportunities* (pp. 237-264). Springer. https://doi.org/10.1007/978-1-4899-7562-1_9.
- [4] Anguelov, N. (2015). *The dirty side of the garment industry: Fast fashion and its negative impact on environment and society*. CRC Press. <https://doi.org/10.1201/b18902>.
- [5] Bruce, M., & Daly, L. (2006). Buyer behaviour for fast fashion. *Journal of Fashion Marketing and Management: An International Journal*, 10 (3), 329-344. <https://doi.org/10.1108/13612020610679303>.
- [6] Taplin, I. M. (2014). Global commodity chains and fast fashion: How the apparel industry continues to re-invent itself. *Competition & Change*, 18 (3), 246-264. <https://doi.org/10.1179/1024529414Z.000000000059>.
- [7] 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. DOI: 10.1038/s43017-020-0039-9.
- [8] Vertica Bhardwaj & Ann Fairhurst (2010) Fast fashion: response to changes in the fashion industry, *The International Review of Retail, Distribution and Consumer Research*, 20: 1, 165-173, DOI: 10.1080/09593960903498300.
- [9] Bick, R., Halsey, E., & Ekenga, C. C. (2018). The global environmental injustice of fast fashion. *Environmental Health*, 17 (1), 1-4. <https://doi.org/10.1186/s12940-018-0433-7>.

- [10] Mandy Sheridan, Christopher Moore, Karinna Nobbs, (2006) "Fast fashion requires fast marketing: The role of category management in fast fashion positioning", *Journal of Fashion Marketing and Management: An International Journal*, Vol. 10 Issue: 3, pp. 301-315, <https://doi.org/10.1108/13612020610679286>.
- [11] Nguyen, H. T., Le, D. M. D., Ho, T. T. M. and Nguyen, P. M. (2021), "Enhancing sustainability in the contemporary model of CSR: a case of fast fashion industry in developing countries", *Social Responsibility Journal*, Vol. 17 No. 4, pp. 578-591. <https://doi.org/10.1108/SRJ-03-2019-0108>.
- [12] Skinner, J. B. (2019). *Fashioning Waste: Considering the Global and Local Impacts of the Second-hand Clothing Trade in Accra, Ghana and Charting an Inclusive Path Forward* [Master's thesis, University of Cincinnati]. OhioLINK Electronic Theses and Dissertations Center. http://rave.ohiolink.edu/etdc/view?acc_num=ucin1553613566277155 Mahdi Darvish & Abdellah Ajj. (2022). Synergistic Antimicrobial Activities of Limonene with Mineral Carriers in LDPE Films for Active Packaging Application. *Science Journal of Chemistry* (2). doi: 10.11648/J.SJC.20221002.11.
- [13] Baden, S. & Barber, C., 2005. *The Impact of the Second-hand Clothing Trade on Developing Countries*, Oxfam GB. Kenya. Retrieved from <https://policycommons.net/artifacts/1822960/the-impact-of-the-second-hand-clothing-trade-on-developing-countries/2561746/> on 03 Oct 2022. CID: 20.500.12592/54vsvh.
- [14] Vella, M., Valodia, I., & Amisi, B. (2006). Trade dynamics in used clothing: The case of Durban, South Africa. School of Development Studies, University of Kwazulu-Natal.
- [15] Brooks, A. (2013). Stretching global production networks: The international second-hand clothing trade. *Geoforum*, 44, 10-22. <https://doi.org/10.1016/j.geoforum.2012.06.004>.
- [16] Selase, A. F. E. G. R., & Selorm, A. J. G. The Impact of the Use of Second-Hand Clothing on the Garment and Textile Industries in Ghana: A Case Study of the Ho Municipality.
- [17] Remy, N., Speelman, E. & Swartz, S. Style that's sustainable: a new fast-fashion formula. McKinsey & Company <https://www.mckinsey.com/business-functions/sustainability/our-insights/style-thats-sustainable-a-new-fast-fashion-formula> (2016).
- [18] Fortuna, L. M., & Diyamandoglu, V. (2017). Optimization of greenhouse gas emissions in second-hand consumer product recovery through reuse platforms. *Waste Management* (New York, NY), 66, 178-189. DOI: 10.1016/j.wasman.2017.04.032.
- [19] ElShishtawy, N., Sinha, P., & Bennell, J. A. (2022). A comparative review of zero-waste fashion design thinking and operational research on cutting and packing optimisation. *International Journal of Fashion design, technology and education*, 15 (2), 187-199. <https://doi.org/10.1080/17543266.2021.1990416>.
- [20] Mukherjee, S. (2015). Environmental and social impact of fashion: Towards an eco-friendly, ethical fashion. *International Journal of Interdisciplinary and Multidisciplinary Studies*, 2 (3), 22-35.
- [21] Bocken and Short, 2016 N. M. P. Bocken, S. W. Short. Towards a sufficiency-driven business model: experiences and opportunities. *Environ. Innov. Soc. Transit.*, 18 (2016), pp. 41-61, <https://doi.org/10.1016/j.eist.2015.07.010>.
- [22] K. Shirvanimoghaddam, B. Motamed, S. Ramakrishna, M. Naebe Death by waste: fashion and textile circular economy case Sci. Total Environ., 718 (2020), <https://doi.org/10.1016/j.scitotenv.2020.137317>.
- [23] Bohlin, A. (2019). 'It will keep circulating': loving and letting go of things in Swedish second-hand markets. *Worldwide Waste: Journal of Interdisciplinary Studies*, 2 (1). DOI: <http://doi.org/10.5334/wwwj.17>.
- [24] Van Boeckholtz, J. D. A. (2020). The second-hand clothing supply chain—tracing translations of objects of clothing from the global North to Ghana.
- [25] Sandin, G., & Peters, G. M. (2018). Environmental impact of textile reuse and recycling—A review. *Journal of cleaner production*, 184, 353-365. DOI: 10.1016/j.jclepro.2018.02.266.
- [26] Persson, O., & Hinton, J. B. (2023). Second-hand clothing markets and a just circular economy? Exploring the role of business forms and profit. *Journal of Cleaner Production*, 390, 136139. <https://doi.org/10.1016/j.jclepro.2023.136139>.
- [27] Jen Pistor, (2022) What to do with clothes once you are done with them. <https://jenpistor.com/2022/05/09/what-to-do-with-clothes-once-you-are-done-with-them/>.
- [28] Picarelli, E. (2022). Crafting Utopias Through Fashion in Ghana and Senegal. *ZoneModa Journal*, 12 (2), 13-24. DOI: <https://doi.org/10.6092/issn.2611-0563/15757>.
- [29] Ayorkor Manieson, L., & Ferrero-Regis, T. (2021). Castoff from London, Pearls in Kantamanto? A critique of second-hand clothing. L Ayorkor Manieson, T Ferrero-Regis - 2021 - ulir.ul.ie.
- [30] Mudu, P., Akua Nartey, B., Kanhai, G., Spadaro, J. V., Fobil, J., & World Health Organization. (2021). Solid waste management and health in Accra, Ghana. <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>.
- [31] Oteng-Ababio, M. (2010). E-waste: an emerging challenge to solid waste management in Ghana. *International Development Planning Review*, 32 (2). <https://DOI10.3828/idpr.2010.02>.
- [32] Sorensen, K., & Johnson Jorgensen, J. (2019). Millennial perceptions of fast fashion and second-hand clothing: an exploration of clothing preferences using Q methodology. *Social Sciences*, 8 (9), 244. <https://doi.org/10.3390/socsci8090244>.
- [33] Laitala, K., & Klepp, I. G. (2018). Motivations for and against second-hand clothing acquisition. *Clothing cultures*, 5 (2), 247-262. <http://dx.doi.org/10.1386/cc.5.2.2471>.
- [34] Bernard, S. (2011). Transboundary movement of waste: second-hand markets and illegal shipments. CIRANO-Scientific Publications 2011s-77. <https://doi.org/10.1016/j.jeem.2014.10.004>.
- [35] Brewer, M. K. (2019). Slow fashion in a fast fashion world: Promoting sustainability and responsibility. *Laws*, 8 (4), 24. <http://doi:10.3390/laws8040024>
- [36] Millward-Hopkins, J., Purnell, P., & Baurley, S. (2023). A material flow analysis of the UK clothing economy. *Journal of Cleaner Production*, 407, 137158. <https://doi.org/10.1016/j.jclepro.2023.137158>.