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Rethinking sustainable design: A critical review on evaluating design practices in the garment industry

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Abstract

Environmental health has gotten worse over the last few years, affecting people's health and overall societal welfare. The apparel industry has made progress during this period, but it led to environmental and social issues. One key for these challenges becoming more noticeable is the increasing consumption of garments due to higher disposable income, leading to a huge demand for production. Therefore, it is important to consider how these garments are disposed of once they are no longer needed.

Recycling and reusing garments are easy solutions due to the growing awareness of environmental issues among customers and their willingness to address them for the sake of their health. This shift in consumption patterns is evident in recent studies. This critical review aims to examine the current movement towards sustainable and long-lasting design in the apparel industry and the scope of design in achieving so.

Keywords: Sustainable design, garment life span, product longevity

1. Introduction

Social and economic transformation across the world has been forced by globalization, but at the same time, it has posed so many challenges to the environment. Environmental degradation has, in the recent decades, proven to be a major issue stretching across the globe with impacts on the lives of citizens and the environment as a whole. It is high time to address the problem of the ecological catastrophe for a global level. (Braungart, 2013) [4] in their natural bends opined that in cradle to cradle, an individual should not only recycle but recover resources, and also recover the environment which is the place we live in, and everyone should ensure that the globe is protected from the current reckless behaviour from people.

Most products that consumers wear have become cheaper in the recent past (Rivoli, 2005) [26]. Offshore manufacturing has been realized and the result has been providing clothes at cheaper prices and this increases their use. Hence, the industry particularly, the apparels, is aiming at the production of large quantities so that apparels are sold at extremely low prices, not forgetting those of the current years trends. This in turn has favored consumers or implemented them to buy more than what they require. Garments are becoming popular among consumers who perceive yard goods as a tool to mediate personal identity (Jackson, 2012) [13]. There are cultures to do with how consumers dispose their clothes since the change in design within the fashion industry means that many fashion styles are over used while other are worn for a limited number of times in the fashion calendar (Bianchi, 2010) [3]. Every piece of the manufacturing process, from the creation of the fabric, production of the clothes, and disposal of clothes has detrimental effects on the environment. Fiber and fiber-rich foods are consumed in our diet in our everyday life. It is also a part of end use commodities like home textiles, apparels, and industrial and technical textiles. These fibers eventually are disposed as end waste of these commodities lifecycle (Allwood, 2006) [1].

Environmental friendly buying behaviour may go a long way in solving the pollution problem emanating from the use of clothes and textiles (Fletcher, 2008) [11]. Majority of the governmental and intergovernmental environmental projects have consumers as one among the target groups.

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2. Need for Sustainability

In the last sixty years fashion production has expanded exponentially creating mass market characterised by the rapidity of the cyclical trend and the turnover of the products (Farrer), The capacity to deliver diversity to clients was once a source of competitive benefit, however these mass market techniques have now become a burden of expensive waste and were which have made fashion industry entangle in a series of adverse ecological practices in the name of blind economic gains (Kunz & Garner, 2011) ^[17]. Because what they want for their clothing is far from what it costs to make, manufacturers and fashion corporations cut costs by purchasing less expensive fabric, often produced using non environmentally friendly processes and cheap labor. A vortex of growing number of cheap and low-quality clothing items produced, and subsequently discarded rapidly (Farrer, 2011) ^[10]. As for the second-hand apparels, the left-behind cheap products harm the Third World nations by strangling their economy or littering the environment in form of dumpsites.

(Saha, 2018) ^[28] insisted that long-term sustainability has been threatened by these weaknesses that include excessive consumption and rapid disposal of fashionable commodities. A majority of fast fashion companies have been in the habit of manufacturing cheap and substandard products. Consequently, the masses are embracing cheap goods of inferior quality in the market. These goods usually have low durability than the other goods found in the market. By going beyond the functional and emotional durability as a possible solution to long-term sustainability one can attempt to find an integrated approach to the fashion consumer sustainability. In the latter the research explores various types of reading along with functional and emotional resilience as one of the possible strategies for long-term sustainability.

In the process, there are the contemporary ideas of ethical fashion that have been created by many conscious and responsible personalities in the last 20 years. The textile and the fashion industries comprise "Ethical Fashion," which refers to ecological fashion accessories, rights of the employees, fairness of the trade, and sustainability. The concept of "Ethical Fashion was initially practiced and emerged in the United Kingdom, United States, as well as the European countries. In today's era, we are blessed with a number of new generation textile and fashion designers, fabrics and garments ranges, different fairs and so on. The global outbreak in the year 2020 has exposed the fact that many business operations are global yet localized while at the same time, it has criticized the rapidly widening income gap within individual countries and across the globe. Many clothing stores in rich economies due to the Covid-19 crisis have had to stop buying from the garment workers in the developing countries and abnormally cancel orders, which make the living conditions of many garment workers worse (Rana, 2021) ^[24].

(Lim, 2012) ^[18] has mentioned that many scholars have conducted several studies to study the possibilities of how consumption in the garment sector can be made sustainable. Nonetheless, based on scholars' and marketers' studies which have been done with aim of bringing change and influencing the customers into effective consumption of apparels, observations reveal that customers are consuming apparels frequently which means that majority of people are over consumers. Other segments of marketing and even customer behaviors have highlighted that the society has woken up to the fact that natural resources are scarce hence their need to conserve them which may explain to some extend some

system factors as to why there is increasing concern in consuming garments and related products.

3. Current Garment Concerns

Fashion sustainability will necessitate radical changes in the practices of all people concerned: producers, marketers and consumers, as well as the designers who bring innovation to life. While the retailers must adopt a sustainable business model, the consumers need to have a vision for sustainable fashion (Reiley, 2011) ^[25]. There are critical areas of attention that our fashion industries focus on: the shortened production cycles, fluctuating trends, and the intentionality of 'fast fashion' products that are inherently unsustainable. By increasing production, producers are able to meet new orders while maintaining a profitable margin in light of a decrease in product value. Consequently, stock is accumulated and stored in large quantities; markets become over-flown. To start an eco-fashion firm, the person needs to conduct a study of consumer preferences to enable a change in production systems that accommodate the ecological balance. Ideally, they should also be able to identify how such societies can be transformed into sustainable ones, would appreciate sustainable business practices as a prospect and not as a limitation (Chandra, 2017) ^[7].

3. Consumer Mindset

Consumers fancy the fast-fashion consumption because it is enjoyable, a rite used in presenting oneself to the world, and a process of categorizations to form social groups; thus, consumers find it as offering them the primary cognitive and emotive satisfaction. From the consumer angle the fast-fashion products are cheap and trendy, they possess the right quality which is sufficient and the collections are restocked repeatedly (Baghi, 2013) ^[2]. From the consumer orientation, people's emotions linked towards buying fast-fashion products in terms of socialising, new identity projects, and performing in a manner that is different when procuring. In addition, products that are offered at fast fashion are sold by firms that mimic luxury fashion brands thus have prior knowledge with other premium fashion products (Joy, 2012) ^[15]. In consumers' willingness acceptance and purchase of new fast-fashion or other fashion products, they demand the level of innovation in these products.

"How fast someone adopts new ideas compared to others explains innovativeness" (Rogers, 2019) ^[27]. This time-of-adoption methodology was first used in other fields, then in fashion studies. But nobody looked into fast-fashion customer trends. With fast fashion, there will be differences in how fast people adopt it. Fast fashion is big in the fashion world. These studies looked at different types of fast-fashion customers, their thoughts on fast fashion, and how different groups justify their choices (Okur, 2021) ^[22].

4. Scope for Design

Designers had lots of different thoughts about consumers as buyers and users of products, and what it means for how long products last. Some claimed that over time, people's views have changed. For example, some said that passing things down to the next generation is not as common as it used to be (Cooper, 2012) ^[9]. The report also mentioned that consumers now expect products to last for a shorter time. One good thing that came up was how much people seem to understand design and how engaged they are with products. Many designers feel like people are more aware of design nowadays, and they care more about how things work. They

think this will lead to a bigger demand for high-quality, long-lasting products, and that people will be willing to spend more on them. But it's also important to make sure people know about the whole product life cycle, like understanding where the materials come from, such as trees for furniture and animals for leather goods.

In today's fashion world, things are often thrown away even though they still work. Design can help encourage a longer relationship between people and their belongings. One good idea is to design products that make people feel satisfied. Studies have shown that there are six main types of symbolic meanings that products can have: positive relationships, personal growth, life purpose, control over the environment, independence, and self-acceptance (Casais, 2015)^[6].

The attachment between a person and their product is called consumer-product attachment. It includes various dimensions. Good experiences and memories reinforce attachment positively, as explained by (Schifferstein, 2008)^[29]

Each design process needs to focus on creating a meaningful relationship between the product and the person to ensure a successful product life cycle. Designing for this relationship requires an understanding of the motivations behind customer purchases, product usage, satisfaction, and disposal behavior. To fully grasp consumer behavior, it's essential to consider the role of consumption and the significance of products in society (Niinimäki, 2011)^[21].

Objects should be able to tell a story along with their owners. The stronger the emotional connection, the more engaged a person becomes with the product. Building trust and closeness between the object and its owner is crucial (Chapman, 2009)^[8]. Designers and scholars can focus on the symbolic meaning of a product, incorporating memory and design elements to enhance its value (Hirscher, 2013)^[12].

Clothing is often repurposed after being discarded due to being outgrown or no longer needed. Up-cycling second-hand clothes is gaining popularity in sustainable fashion. More actions are needed to promote environmentally friendly practices in the fashion industry, particularly in terms of commercial sustainability. Consumers play a vital role in achieving this, so educating them on the impact of their purchasing habits and proper clothing disposal methods is essential (Mehta, 2021)^[20].

The reduction of fabric waste, lengthening the life of clothes, and decreasing overall garment consumption were all positive outcomes of studies on transformable garments. The industry needs to embrace transformable design methods more readily, with more designers and customers engaging in the design process, whether driven by sustainability, personalized designs, or a general interest in transformable fashion.

5. Design for Longevity

When it's about creating clothes sustainably, the design phase is super important. The choices made here can really impact how eco-friendly the garment ends up being. For instance, a designer could aim for zero waste by working with the patternmaker to cut the fabric in a way that minimizes waste. However, not much attention has been given to how zero waste design can actually improve the user experience of fashion. Zero waste fashion involves the user in both designing the garment and how they use and modify it, aiming to build a better relationship between the designer, maker, and user (Sonjaya, 2023)^[30]. This shift can lead to a more sustainable and enjoyable experience for everyone involved.

Another option for designers, whether they're making mass-

market items or high-end fashion, is to focus on creating timeless pieces that people can wear for years to come. The challenge for mass-market designers is that traditionally, "design" has meant either sourcing designs from overseas or copying existing ones, which is cheaper than coming up with new designs in-house. While design practitioners are giving more attention to expanding a product's psychological lifespan, there hasn't been much research done.

Durability stands out as one of the clearest sustainable design solutions for extending a product's lifespan. However, creating longer-lasting products require not just prolonging the physical lifespan but also extending the psychological lifespan. This calls for significant involvement of different parties such as designers, manufacturers, secondary markets, social networks, and supporting organizations towards building an environmentally sustainable economy (Ko, 2011)^[16].

Longevity refers to how long a product - either as a set of resources or as an item that serves a function - can fulfil its intended purpose over a specific period. Design for Longevity aims to create products with an optimal lifespan, considering the user, business, and resource efficiency when planning the product's longevity (Carlsson, 2021)^[5].

To make products personal, designers should integrate localization in the design process following sustainability principles. This means considering local skills, materials, and production methods from start to finish. Personalization goals and practices give insight into people's needs. Being able to easily adjust a product during use increases its lifespan. Design should allow for simple attachment and detachment (Ozan, 2017)^[23].

5. Conclusion

The world is waking up to the consequences of overconsumption and early disposal every day items including clothing. This is a crucial opportunity for design industry to create solutions that improve the durability and longevity of the clothing thereby decreasing the environmental implications.

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