

The Influence of Sustainability and Social Responsibility on Fashion Trends

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Abstract *The purpose of this study was first, to examine the causes for the recent acceleration in the increase of textile/apparel waste and the current practices for reducing waste in the global textile and apparel industry; and second, to explore the influence of sustainability and social responsibility on fashion trends. Extensive literature on sustainable apparel and sustainable and socially responsible practices by global textile and apparel firms was reviewed in conducting this research. First, an accelerated fashion diffusion speed due to fast fashion was focused on as a cause for the increase in textile/apparel waste whereas mass customization was focused on as a potential solution for reducing waste. Then, the influence of the social trend toward sustainability and social responsibility on fashion trends was discussed, particularly the trends toward green products and recycled fashion, the trend against using real fur or leather, and minimum-fabric-waste fashion in design and product development. This study furthers consumers' understanding of sustainability and social responsibility related to fashion trends and hopefully increases their consciousness in becoming socially responsible consumers. This study will also contribute to better decision-making in apparel and textile firms to produce sustainable fashion products.*

Key words *environmental friendliness, green, recycling, social responsibility, sustainability, waste*

Introduction

Contemporary consumers are becoming increasingly conscious about their purchases and are looking to reduce the impact of their consumption on the environment. Consequently, many companies have embraced a "green marketing" concept to attract environmentally conscious consumers (Kim & Damhorst, 1998). Coupled with a rapidly growing world economy and the accelerated speed of fashion trend diffusion, sustainability and social responsibility have become increasingly important concepts affecting many aspects of the fashion business.

The terms "sustainability" and "social responsibility" are often interchangeably used. However, Dickson, Loker, and Eckman (2009) differentiate one from the other; social responsibility is an umbrella term including all responsible practices related to labor standards, human rights, and the environment while sustainability implies improving, building upon, and achieving responsible practices that are maintained over the long term (Dickson, Loker, & Eckman, 2009). According to Stern and Ander (2008), sustainability is defined as "a system utilizing renewable resources that meets the requirements of the present without

compromising the requirements of future generations or disrupting present or future environmental balance” (p. 40). Dickson, Loker, and Eckman (2009) argued that sustainability is the ultimate goal of successful socially responsible practices, which improve the lives of people and the health of the environment in which they live for the future.

Until the 1990s, there was little discussion about environmental impacts of the production and consumption of apparel or other products. Following the previous decade when labor issues received the most attention, environmental issues emerged as the next area of social responsibility that companies were expected to address (Dickson, Loker, & Eckman, 2009). For example, companies have focused their efforts on the adoption of environmentally friendly materials and on production processes that have low toxic chemical use and waste. In addition, the importance of total energy use, including transportation costs for production and distribution as well as end-of-life options such as recycling, redesign, and biodegradable disposal, has been integrated into business strategies (Dickson, Loker, & Eckman, 2009). Companies such as Patagonia and Timberland quickly moved toward this direction and began integrating both environmental stewardship and social responsibility into their mission, vision, and business strategies (Dickson, Loker, & Eckman, 2009). There are numerous other companies currently focusing on sustainability including Gap, Banana Republic, Nike, Liz Claiborne, and Levi and Strauss & Co. With growing sensitivity toward social and environmental issues, business executives recognize that long-term economic growth is not achievable unless that growth is socially and environmentally sustainable (Epstein, 2008). Epstein (2008) argued that a balance between economic progress, social responsibility, and environmental protection will provide a competitive advantage to a firm.

Compared to several other disciplines such as architecture, landscape architecture, environmental design, and interior design, research on sustainability in the field of apparel has a relatively short history. Much of the research conducted has focused on social responsibility concerning labor issues in the manufacturing process. Also, there have been studies on sustainable fibers and textiles; however, little research has been conducted on sustainability and social responsibility related to fashion trends, including product design and development processes and methods.

Therefore, the purpose of this study was to address this void in the research. To meet this need, the study first examines the causes for the recent acceleration in the increase of textile/apparel waste and the current practices for reducing waste in the textile and apparel industry; and second, it explores the impacts of sustainability and social responsibility on fashion trends. Extensive literature on sustainable apparel and sustainable and socially responsible practices by textile and apparel firms was reviewed in conducting this research. This study furthers consumers’ understanding of sustainability and social responsibility related to fashion trends and hopefully increases their consciousness in becoming socially responsible consumers. This study will also contribute to better decision-making in apparel and textile firms to produce sustainable fashion products.

Causes for Increasing or Decreasing Textile/Apparel Waste

Increased Waste Due to Accelerated Diffusion of Innovation

2008). Moreover, with the advent of fast fashion retailers, garments are increasingly more disposable. Some consumers buy new, inexpensive clothes every two weeks (Rosenthal, 2007). European companies Zara and H&M, which created the notion of fast fashion, shortened the fashion cycle and accelerated the speed of retail (Stern & Ander, 2008). Although Zara is admired for its efficient and profitable fashion replenishment cycle that delivers new product styles every two weeks, it unfortunately promotes overconsumption (Dickson, Loker, & Eckman, 2009). Currently, many retailers no longer have four to five fashion collections per year; instead, new fashions arrive daily to retain consumer interest and stimulate sales (Frings, 2005).

In this era of fast, disposable fashion, both designers and consumers must be more conscious of the problem of post-consumer waste (Welters, 2008). Hawley (2006) argued that a sustainable fashion system could be viewed from a production-consumption perspective. She asserted that a balanced system produces garments that match the rate of consumption and manages waste through reuse, recycling, and biodegradable approaches. Currently, the U.S. fashion system produces much more than the consumer need, resulting in excessive fabric and garment waste in landfills (Hawley, 2006). Thus, now is the time to identify processes and methods that can reduce the consequences of overproduction and overconsumption.

Mass Customization to Slow Down Consumers' Desire for New Fashion

There are various methods available to slow down consumers' adoption of new fashion. One method is to make clothing items that are more durable and long-lasting that need to be replaced less frequently (Chen & Burns, 2006). However, the best approach to achieving a sustainable fashion system is probably making the right product. Thus, a custom fashion system making the right amount of the right product is very effective in achieving sustainability (Loker, 2008). Mass customization, which combines the efficiency of mass production and the individualization of custom design, is the business strategy for producing and delivering the right product at the right time to the right place (Pine, 1993). Clothing is made on-demand only when there is a customer to buy it, and it is customized for style, size, or function with the assistance of technology. Technology involves consumers in the design and product development process so that the resulting product is exactly what the consumer wants. For example, body scan technology improves fit, therefore reducing the flow of unsold and returned apparel due to poor fit. Customization creates single, individualized products and facilitates a sustainable fashion system by decreasing the flow of product and waste.

In addition to mass customization, seamless knitting, digital textile printing, and wearable technology are other technological examples that contribute to the reduction of textile/apparel product waste by creating customized garments or enhancing function. Digital textile printing enables the matching of production to consumption by printing only ordered items while wearable technology and smart fabrics extend a product's life span by improving the functions for personal needs such as monitoring biological health and adjusting to temperature or moisture. These technology-enabled apparel applications allow for a future of design and product development that has numerous possibilities for developing sustainable solutions (Loker, 2008).

The Influence of Sustainability and Social Responsibility on Fashion Trends

Many sustainable movements and practices are gaining momentum and moving toward the mainstream. While green buildings, interiors, and home products flourish, fashion also holds a great potential impact on sustainability (Hethorn & Ulasewicz, 2009). In order to determine the environmental friendliness of apparel products, various aspects of an apparel product's life cycle can be considered: materials selection, product design, production and sourcing, distribution, product care or maintenance, and end-of-use management (Dickson, Loker, & Eckman, 2009). Bio-based material selection, those that are from recyclable materials or materials that can be recycled and that are not processed or finished with toxic chemicals, can decrease harm to the environment (Sustainable Textile Standard, n.d.). Secondhand garments can also be recycled into new designs as another way to facilitate sustainability. Creative garment design and pattern-making ideas that minimize fabric waste can also reduce the environmental impact. New concepts are still needed that embrace a rethinking of not only material components but also the process of garment design, production, use, disposal, and reuse as well (Hethorn, & Ulasewicz, 2008).

In the following section, the influence of sustainability and social responsibility on fashion trends will be discussed, focusing on consumer trends toward green products and recycled fashion, consumer trends against using real fur or leather, and minimum-fabric-waste fashion in design and product development.

Consumer Trends toward Green Products

When consumers' consciousness about sustainability was increasingly raised in the 1990s, organic cotton, Sally Fox's naturally colored cottons, and hemp drew our attention (Welters, 2008). Organic cotton is an eco-friendly fiber because it uses lower amounts of insecticides and herbicides than traditionally grown cotton. The market for organic cotton is increasing each year; in fact, retail sales of organic cotton have more than doubled in the last four years (Laszlo, 2008). One example of the best use of organic cotton is the new product line of Eco2Cotton™--it requires no new water to grow; utilizes no fertilizers, no insecticides, and no dyes; and produces no waste (Ulasewicz, 2008b). Figure 1 shows a 100% organic cotton collection created by Sanko.

Untrue to the widespread notion that natural fibers are environmentally friendly, fiber content alone may not necessarily be an accurate indicator (Chen & Burns, 2006). For example, the average consumer will assume cotton is more environmentally responsible than synthetic polyester because cotton is a natural fiber. Although cotton is renewable and polyester is produced from a nonrenewable source, the current conventional cotton production system is heavily dependent upon pesticides and fertilizers (Chen & Burns, 2006). Consumers are mostly unaware of these environmental hazards and should become more educated about sustainable materials and products.

The ecologically destructive fibers of cotton and polyester account for about 80% of the world fiber market; therefore, a large majority of the world's textiles used in contemporary fashion are not sustainable (Blackburn, 2005). Instead, natural materials such as hemp and bamboo, biodegradable synthetics such as corn starch and soya bean fibers, and cellulose can be used ("How to Recycle," 2009). From these raw materials, new fabrics can be created, like soya, a silky and soft cotton-like fabric made from soybeans; sasawashi, a cotton- or linen-like naturally absorbent fabric made from a mixture of kumazasa

bamboo with washi; and Eco-Spun, a wool-like fabric made from recycled soda bottles (Ulasewicz, 2008a).

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Figure 1.
A 100% Organic Cotton Collection Created by Sanko

Of all the interesting new fibers, bamboo is one of the most favored by designers. Bamboo is a fast-growing grass and is pest-persistent (“Bambro Tex,” 2003). Its fibers have a soft hand, and it drapes well. It is also more easily dyed, producing beautiful colors not possible in cotton (“Bambro Tex,” 2003). Unfortunately, the hard outer core of bamboo must be broken down to make the fiber usable for spinning into yarn, requiring chemical use in this process. According to Oakes (2006), the chemical use must be worked out if bamboo is to be considered truly sustainable (as cited in Ulasewicz, 2008a). Corn is also being used as an alternative dextrose source because fabrics made from corn fiber seem to have the comfort and hand of natural fibers, in addition to its low cost and easy care (Kelly, 2003). Soya bean protein fibers create warm, soft, comfortable, wool-like fibers (Blackburn, 2005).

Gap Inc. now offers organic cotton t-shirts in response to growing customer demand and as part of the company’s commitment to finding innovative, socially responsible ways to make its products. In order to preserve the natural colors and qualities of the organic cotton fiber, Gap’s organic cotton t-shirts

have not been chemically dyed or bleached. Certified organic cotton is grown without the use of synthetic pesticides or fertilizers that harm the environment. Recently, Swedish retailer H&M launched its first collection featuring 100% sustainable materials in March 2010. "The Garden Collection" represents a major step toward H&M's promise to increase its use of organic products to 50% each year until 2013. This collection, including floral prints and the flower-power design from the '70s, was made using organic and sustainable materials such as organic cotton, organic linen, and recycled polyester made from PET-bottles and Tencel ("H&M to Launch," 2010).

Consumer Trends against Using Real Fur and Leather

Unlike the popularity of fur in the first half of the twentieth century, it later became the target of animal protection campaigns by environmentalists. High-profile campaigns in the 1990s contributed to consumers' doubt about the moral legitimacy of wearing fur (Skov, 2005). People for the Ethical Treatment of Animals (PETA) and Friends of Animals are two animal advocacy groups who consistently lobby against the use of fur in fashion. PETA, the largest animal rights group in the world, is a U.S. non-profit organization founded in 1980. It is supported by two million members, including celebrities such as Paul McCartney, Pamela Anderson, and Sarah Jessica Parker. The organization is known for its aggressive media campaigns claiming, "Animals are not ours to eat, wear, experiment on, or use for entertainment." Several supermodels have posed naked with PETA's slogan "I'd rather go naked than wear fur" (Skov, 2005). Many top British designers have also pledged to go fur-free, including Vivienne Westwood in England and Calvin Klein, Ralph Lauren, and Tommy Hilfiger in the U.S.

It has been argued that fur is more environmentally friendly than oil-based synthetic fibers; however, this is not factually based considering the chemicals used to treat fur, the feeding of the animals, the transportation to slaughter, the massive energy consumption, and other waste associated with the industry including slurry, bedding, and animal corpses (Jagger, 2007; Skov, 2005). Like fur, leather is also renewable and is fully biodegradable because it comes from organic sources; however, leather products require dry cleaning using chemicals such as perchloroethylene, trichlorofluoromethane, or trichlorotrifluoroethane, which are toxic to humans and harmful to the environment ("Dry Cleaning," 2002). As alternatives, fake fur and leather have become increasingly popular. The best fake fur tends to be made of fine acrylic fibers because acrylic can be dyed to represent the colors and patterns of real animals (Ellis-Christensen, 2010).

Consumer Trends toward Recycled Fashion

The textile recycling industry is one of the most established recycling industries in the world consisting of more than 500 businesses (Council for Textile Recycling, 1997). The average American throws away roughly sixty-eight pounds of clothing and textiles per year and about 85% of this waste goes to landfills (Dickson, Loker, & Eckman, 2009). According to an analysis of municipal solid waste, textile waste contributes to approximately 4.5% of U.S. landfills (Hammer, 1993). To reduce the waste in landfills, the textile recycling industry diverts more than 1.25 million tons annually of post-consumer textile waste and diverts approximately 75% of the pre-consumer textile waste away from landfills into recycling centers

(Chen & Burns, 2006; Council for Textile Recycling, 1997).

The reuse, refurbishing, and recycling of fibers, fabrics, and garments can be a profitable as well as a sustainable business practice. For example, polyester has been extensively recycled to reduce its accumulation in landfills; In addition, polyester can be produced from recycled soda bottles (Chen & Burns, 2006). Patagonia has been a leader in promoting recycling and environmentally sound material choices. In the early 1980s, a Patagonia and Malden Mills collaboration led to a technological breakthrough in reuse and recycling: soda bottles were melted down to a basic polymer, extruded into fiber, and knitted into fleece (Loker, 2008). In 2005, Patagonia partnered with Japan's Teijin Group who had developed ECO CIRCLE in 1999, a closed-loop fiber-to-fiber recycling system that returns used fabric to its fiber state to be reused. Together, they initiated the Common Threads Recycling Program, where customers voluntarily return used Capolene garments to Patagonia to be returned to the fiber state using the ECO CIRCLE process, and they are then fashioned into new garments (Loker, 2008).



Figure 2. Young, Jirousek, and Ashdown's Recycled Garment Collection "Undesigned"

The market for recycled fashion created from post-consumer recycled textiles or garments is growing and has begun to receive increasing attention from consumers. The designer Tierra Del Forte, for Del Forte Denim, has integrated a model for new consumerism within her business called Project

Rejeaneration. Consumers send their used jeans back to the company after they have tired of them, and the company refreshes and produces a second generation of new products from them (Ulasewicz, 2008a). In 1999, Young, Jirousek, and Ashdown (2004) conducted a study with the collection “Undesigned” (see Figure 2). They argued that the project, as a response to the sustainable design movement that emerged in the 1990s, uncovered the need to completely rethink design, production, and the use of materials and resources in a way that is beneficial to both the environment and the people. The collection was designed for urban nomads, a demographic consisting of people living in urban areas who commute using ecologically conscious public and human-powered modes of transportation. They discussed sustainable design methods incorporating the use of post-consumer recycled clothing and materials. The key concept for the project was “undesigned,” which emphasized “the quality of the garments as deconstructed and reconstructed or undesigned and redesigned objects with a prior history, as opposed to conventionally designed and produced clothing” (p. 61).

In recent years, a growing number of designers have created recycled, high fashion presented in fashion shows. For example, Linda Loudermilk, a California designer, launched her line “Luxury Eco” with the goal of creating a fabulous eco-fashion to convey the message that eco can be edgy, feminine, playful, and hyper-cool (Loudermilk, n.d.). With an increasing appearance of designers who create recycled high-end collections, one preconception of recycled fashion--not stylish or fashionable—will be overcome.

Minimum-Fabric-Waste Fashion in Design and Product Development Processes

Although sustainability has become an increasingly crucial issue in the apparel industry, many discussions have focused on sustainable materials and the manufacturing process with relatively limited discussions on how to integrate it into apparel design and product development processes. In fact, most factors that have environmental impacts are determined at the design stage, and thus, design has a central role to play in achieving a sustainable future (Chapman & Gant, 2007).

A consideration of the minimum waste of fabric in the design process is crucial as the amount of fabric waste is determined by garment and pattern design, depending on the shapes and number of pattern pieces. Rissanen argued (2008) that 15% of total fabric on average ends up as waste. The most common way to minimize fabric waste in garment and pattern design processes is to use rectangular pattern shapes. In this case, fit can be achieved with drawstrings or belts. Additionally, these garments can be sold at reduced prices due to the minimal sewing (Rissanen, 2008). In the late 1990s, Issey Miyake and Dai Fujiwara launched A-POC (A Piece Of Cloth), knitting a flat tube of fabric with the two sides of the tube joined in some areas. A-POC is made using an industrial knitting or weaving machine programmed by a computer. This process creates continuous tubes of fabric. The consumer buys a tube and, following the lines of the joints, cuts out the finished garment exactly to the length he or she wants (Kries & Vegesack, 2001). This interactive method not only reduces leftover fabric but also permits the consumer to participate in the final step of the design of their garment. With A-POC, mass production and custom-made clothing are integrated into one through the use of technology and imaginative thinking (Miyake & Fujiwara, 2010). There are numerous other examples. For instance, Australian designer Mark Liu created a strapless dress for his zero-fabric-waste garments by designing the garment pattern and the

printed textile simultaneously. By cutting and sewing, the entire textile piece becomes the dress with no fabric waste. Another designer Yeohlee Teng in New York strives for economical fabric use as the signature to her work (Rissanen, 2008).

Discussion and Implications

As many sustainability movements and practices move toward the mainstream, it has frequently been said that “green” is a new way of life rather than a trend. Due to this shift in global culture, it is important to rethink the potential impact of fashion on sustainability. It has been increasingly noted that design determines the amount of waste and is a crucial component of the sustainability movement. Using creative and innovative design ideas can improve quality of life by substituting less harmful products and processes for socially responsible ones. Thus, sustainable design requires creative and innovative thinking to give fashion design new directions, priorities, and strategies in line with the sustainability movement. The fashion industry must develop a new priority--maintaining a balance between environmental sustainability and aesthetics rather than focusing purely on aesthetics.

There are some preconceived drawbacks concerning sustainable garments in the minds of consumers. In addition to the fact that the color of apparel products made of organic materials (e.g., earth tones or off-white colors) or the style of recycled garments might not be very stylish, the prices of organic and recycled textile products are often higher than those of regular items. To resolve this issue, Wal-Mart is promoting green products by bringing unit costs in line with the products’ non-green counterparts; therefore, it is now possible to buy an organic v-neck shirt at Wal-Mart for about the same price as one made from conventionally grown cotton (Laszlo, 2008).

Increased cost is not only an issue for consumers but also for fashion firms who want to adopt sustainable practices. Developing and implementing sustainability strategies poses a challenge for many firms who are confronted with the seemingly almost impossible task of simultaneously improving social, environmental, and financial performance. Companies are required to invest a large amount of money in sustainability programs, which include technology improvements. Although it is to say they want sustainable solutions, few of them may be willing to pay more for these benefits. However, it appears there is an increasing evidence that sustainable solutions are a big driver for business going forward. Those not paying attention to the impact of their products will eventually be left behind in the competition.

There are also a growing number of international organizations supporting sustainability. Examples include the international nonprofit organization Sustainable Style Foundation which was founded to provide information, resources, and innovative programs that promote sustainable living and sustainable design. The foundation also supports the Outstanding Sustainable Style Achievement awards to recognize outstanding social and environmental efforts across the many style and design industries. This is one of a few places where style-makers, community organizations, businesses, and government come together to celebrate positive changes in the world (Sustainable Style Foundation, 2006). GreenBlue is another nonprofit organization that supports the development of practical design solutions and the implementation of sustainability. GreenBlue is host to a variety of activities that promote ideas such as sustainable packaging and competitions for new design ideas.

This study examining sustainable and socially responsible fashion trends in both conceptual and practical aspects will increase consumers' understanding and raise consciousness about sustainability and social responsibility related to fashion trends. Through strengthened consumer education, the demand for sustainable garments will increase and eventually change the fashion market. In addition, this study will contribute to better decision-making in apparel and textile firms to produce sustainable fashion products. If brands and retailers share a commitment to the environment and social responsibility, despite current challenges such as cost issues, our goal for the sustainable development of societies will be achieved. Sustainable production and consumption of the right apparel and textile products and less of them will direct us to a more sustainable and responsible way of life.

For future studies, it is suggested to examine all supply chains of the apparel industry focusing on sustainability. That will provide us a comprehensive picture of the potential benefits and challenges to developing a more sustainable apparel industry. Additionally, unfolding professionals' views and ideas through industry/academia collaborative work may also offer valuable insight. These industry professionals are directly involved in design, production, and retailing. They will have first-hand knowledge of industry practices and can measure sustainable performance through social, environmental, and economic variables.

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