

Theoretical Research on The Sustainable Transformation of Fast Fashion Business Models

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Abstract. As global environmental problems grow and consumers' environmental awareness increases, the fast fashion industry is also under great pressure for sustainable development. This paper explores the sustainable transformation of fast fashion business models from the perspectives of sustainable development theory, business model innovation theory, and stakeholder theory. The traditional fast fashion business model is characterized by being "fast, cheap, and abundant", launching new clothing styles in a short time and selling them to consumers at lower prices to make a lot of profits, but this approach causes a lot of problems such as resource waste, environmental pollution, and damage to the rights and interests of workers. By analyzing the transformation cases of typical fast fashion enterprises such as Zara, H&M, and Uniqlo, this paper proposes a theoretical framework for the sustainable transformation of fast fashion, namely "green supply chain reconstruction, circular economy model innovation, digital technology empowerment, and consumer education guidance". The study suggests that for fast fashion companies to achieve sustainable development, they must shift from the original linear model of "acquisition - manufacture - discard" to a circular model of "design - production - use - recycling", improve production methods while using sustainable materials, establish recycling systems, and develop new business forms such as leasing and sharing to achieve a win-win situation for economic and social benefits. The findings of this study provide a theoretical basis for how fast fashion enterprises can achieve sustainable development, have a certain reference value for how relevant government departments and industry associations can introduce relevant policies and standards, and also contribute to promoting the green development of the entire fashion industry.

Keywords: Fast fashion; Business model; Sustainable transformation; Circular economy; Green supply chain.

1. Introduction

Fast fashion is a significant part of the global fashion retail industry, facing huge environmental pressure while the economy is growing rapidly. According to the Ellen MacArthur Foundation's 2023 report, the global fashion industry is worth more than \$2.5 trillion a year, with fast fashion brands accounting for nearly 40 percent, but it is also the world's second-largest source of pollution, generating more than 92 million tons of textile waste and consuming about 79 billion cubic meters of water each year. And as global environmental problems grow and consumers' environmental awareness increases, the traditional fast fashion business model's "fast, cheap, more" concept is being questioned by more and more people.

On this basis, the sustainable transformation of fast fashion enterprises has become a matter of widespread concern[1] in both academia and industry. The European Commission's 2023 Sustainable Textiles Strategy, which requires that textiles sold in the EU market be durable, recyclable and non-toxic by 2030, has undoubtedly accelerated the transformation of fast fashion companies. This paper attempts to explore the reasons and ways for the sustainable transformation of fast fashion enterprises based on theories such as sustainable development theory, business model innovation theory and stakeholder theory, starting from the basic characteristics of the fast fashion business model and the sustainability problems it faces, so as to provide some reference for the green transformation of the entire fashion industry.

2. The connotation and characteristics of the fast fashion business model

2.1 Definition of the Fast fashion business model

The fast fashion business model is a business model that responds quickly to fashion trends and caters to consumers' demand for trendy clothing by shortening the product development cycle, reducing production costs, and accelerating inventory turnover. This model first emerged in the 1980s by the Spanish company Zara. Its main idea is to quickly transform high-priced fashion designs into low-priced products, and to improve[2] from design to shelf on the basis of a vertically integrated supply chain. The essence of the fast fashion model is to transform the traditional fashion industry's seasonal production into year-round production, and to attract customers' desire to buy with a constant stream of new styles. This benefits from a global production network, taking advantage of cheap labor in developing countries, along with advanced information technology and logistics systems for mass production. The success of the fast fashion business model lies in seizing the modern consumers' demand for fashion, convenience and affordability, and changing the traditional competitive landscape of the clothing retail industry with a new business model.

2.2 Core features of the fast fashion business model

Fast fashion business models are characterized by being "fast, cheap, and abundant." [3] Fast fashion companies shorten the traditional 6-12-month design and production cycle to 2-4 weeks, and the speed from catching trends to product launch is very fast. Zara can get new products from design to launch in just 15 days. In terms of price, fast fashion companies can be much cheaper than traditional luxury goods by means of bulk purchasing, standardized production and flat distribution channels, making trendy clothes accessible to ordinary consumers. In terms of product variety, fast fashion companies typically introduce new products every week, with thousands of new items in a year. H&M has more than 3,000 new items in a year, far exceeding traditional fashion brands. All of this is inseparable from strong supply chain management capabilities, rapid design and development capabilities, accurate market forecasting capabilities and efficient global logistics systems [4].

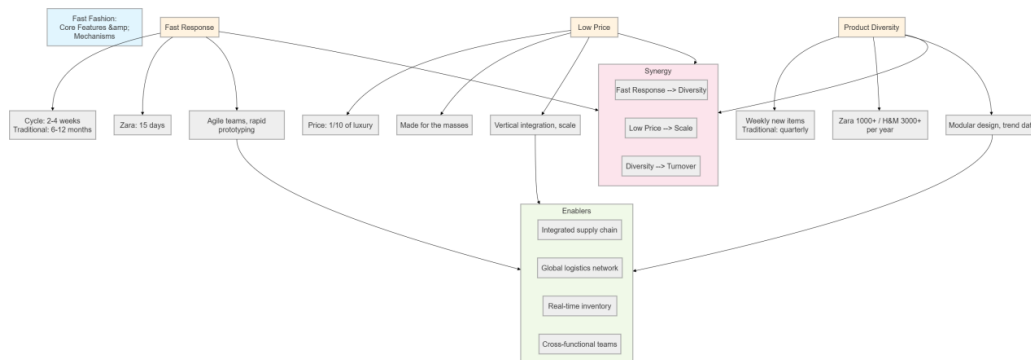


Figure 1. Overview of big data technologies

2.3 The development history of fast fashion business models

The development of the fast fashion business model can be traced back to the late 1970s and has gone through three main stages: start-up, expansion and globalization. The initial stage began with the establishment of Zara in Spain in 1975, when Amancio Ortega, the founder, first achieved rapid turnover of fashion products through a vertically integrated production model and nearby sourcing strategy. The expansion phase took place between 1990 and 2010, with brands like H&M, Uniqlo and Forever 21 emerging one after another, and the fast fashion model expanded from Europe to major global markets, with the global fast fashion market size reaching approximately \$98 billion in 2019. Since 2010, with the popularization of digital technology and the improvement of consumption capacity in emerging markets, fast fashion companies have accelerated their expansion into regions such as Asia and Latin America, and China has become the second largest fast fashion consumer

market[5] after the United States. The rise of online fast fashion platforms such as SHEIN in recent years marks a new stage of digital transformation for the model.

3. Sustainability Challenges for Fast Fashion Business Models

3.1 Sustainability challenges at the environmental level

Fast fashion business models face huge sustainability problems in terms of the environment, mainly manifested in three aspects: high resource consumption, severe pollution and difficult waste disposal. According to the United Nations Environment Programme's 2023 data, the clothing industry uses 20% of the world's fresh water, and it takes about 2,700 liters of water to produce a cotton T-shirt, equivalent to a person's water intake for two and a half years. The rapid and mass production of the fast fashion industry has exacerbated the problem, with about 2.2 billion tons of water used for textile printing and dyeing in China each year[6]. In addition, the fast fashion industry uses a large amount of chemical dyes and auxiliaries. According to the World Bank, wastewater from the textile dyeing and finishing industry accounts for 17%-20% of global industrial wastewater discharge, containing harmful substances such as heavy metals and organic pollutants, causing severe damage to aquatic ecosystems. Moreover, the "use and discard" consumption concept advocated by the fast fashion model has led to a significant increase in textile waste. Every year, more than 100 million tons of textiles are discarded globally, but less than 1% of them are recycled and reused. Most of the textile waste ends up in landfills or incineration, causing land and air pollution.

3.2 Sustainability challenges at the social level

Fast fashion business models, while reducing costs and improving efficiency, also bring a series of social problems, especially the neglect of labor rights and the lack of responsibility in supply chains. According to the 2023 statistics of the International Labour Organization, there are approximately 75 million people working in the textile and apparel industry worldwide, and more than 60 percent of them are in developing countries, where workers often face low pay, long working hours and poor working conditions[7]. In Bangladesh, the world's second-largest exporter of clothing, the average monthly salary of textile workers in the country is only \$95, which is far from enough to meet daily living needs. In order to cut costs and deliver quickly, fast fashion companies often hand over orders to factories that are not adequately regulated, resulting in high rates of child labor, forced labor and occupational injuries. Moreover, fast fashion has a negative impact on consumers. The prevalence of excessive consumerism not only causes waste of resources but also promotes materialistic ideas and has an adverse effect on the values of teenagers.

3.3 Sustainability challenges at the economic level

Fast fashion business models are also economically unsustainable, mainly due to an excessive reliance on low-price competition, an unreasonable distribution of value chains, and poor[8] resilience. The traditional fast fashion profit-making model is based on cost advantages gained from mass production, but these cost advantages are being weakened due to rising global labor costs and stricter environmental requirements. According to a 2023 McKinsey report on the fashion industry, labor costs have risen by an average of 35 percent over the past five years in major textile producing countries in Asia, and environmental compliance costs have increased by about 50 percent, putting a lot of pressure on fast fashion companies. In addition, the fast fashion industry's value chain is a typical "smile curve," where brands and retailers are at the top of the value chain, earning huge profits, while the production and processing segments have meager profits, leaving suppliers and workers unable to benefit from the industry's development. Moreover, the fast fashion model has a poor response to market changes and external shocks. During the pandemic, many well-known fast fashion brands suffered huge losses or even went bankrupt, indicating that the model is very vulnerable[9] to systemic risks.

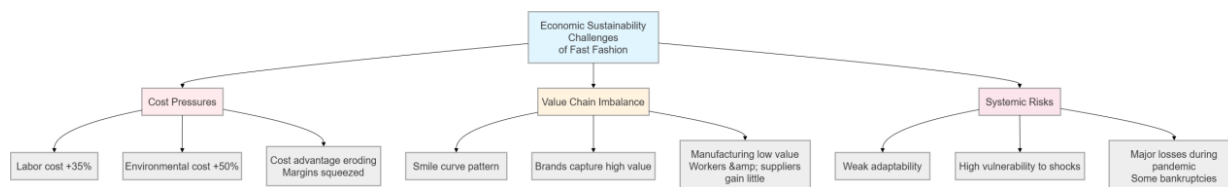


Figure 2. Economic Sustainability Challenges of the fast fashion business model

4. Theoretical Framework for the Sustainable Transformation of Fast Fashion Business Models

4.1 Theoretical Foundation for Sustainable Business Model Transformation

The theoretical foundation of sustainable business model transformation is built on the integration of the triple bottom line theory, the stakeholder theory, and the theory of systemic change. The triple bottom line theory, which emphasizes that companies must pursue economic profits while taking into account environmental protection and social responsibility, provides fast fashion companies with a theoretical basis to re-examine the logic of value creation. Stakeholder theory points out that the sustainable development of enterprises requires balancing the interests of consumers, suppliers, employees, communities, governments and other parties. The transformation of fast fashion enterprises should not merely focus on maximizing shareholder value, but should build a value network that benefits all parties. Systemic change theory suggests that sustainable transformation is an all-round change process involving corporate culture, organizational structure, operational processes, and technological systems, which requires top-level design and systematic planning[10] at the strategic level. In the context of the fast fashion industry, this theoretical framework requires enterprises to shift from the traditional short-cycle, high-frequency, low-cost model to a long-term value creation model that focuses on quality, durability, and environmental friendliness, and to achieve a fundamental reconfiguration of business models by redefining product lifecycle management, supply chain collaboration mechanisms, and consumer relationships.

4.2 Drivers of the sustainable transformation of fast fashion

Fast fashion's sustainable transformation is driven by both external pressures and internal dynamics. External drivers include increasingly strict environmental regulations, growing environmental awareness among consumers, supervisory pressure from the media and non-governmental organizations, and investors' focus on the ESG (environmental, social, governance) performance of enterprises. According to McKinsey's 2023 survey, more than 67 percent of consumers are willing to pay a higher price for sustainable fashion products, a 15-percentage-point[11] increase from 2019. In terms of policy, the EU's Textile Strategy proposes that all textiles should be durable, repairable and recyclable by 2030, California in the US has introduced the Textile Recycling Act, and China has strengthened environmental regulation of the textile industry under the "dual carbon" goals. The internal drivers are the need for companies to gain a long-term competitive advantage, maintain a good brand image, improve work efficiency and develop themselves. Many fast fashion companies have realized that traditional business models can no longer be sustained in the face of increasingly tight resources and rising labor costs, and that sustainable transformation can reduce reliance on raw materials, improve resource utilization, increase brand value, and thus achieve better development.

4.3 The path to achieving sustainable transformation in fast fashion

The path to achieving sustainable transformation in fast fashion can be divided into four aspects: ecological transformation of product design, green transformation of supply chain, circular economy transformation of business model, and sustainability of[12] consumer relationship. In terms of product design, companies should start from the source and use eco-design concepts for product

design, using sustainable materials such as organic cotton, recycled fibers, and bio-based materials to make the products more durable, easier to repair and recycle. H&M's Conscious collection uses all sustainable materials, and Zara says it will use sustainable materials for all its products by 2025. The green supply chain upgrade requires companies to build a transparent and traceable supply chain and work with suppliers to promote clean production technologies, renewable energy use and waste reduction. Fast Retailing, the parent company of Uniqlo, has committed to achieving carbon neutrality in its supply chain by 2030.

The circular innovation of business models is the key to transformation, including developing the product-as-a-service model, establishing a recycling and reuse system, and promoting the shared rental business format, etc[13]. Rent the Runway's clothing rental model, ThredUp's second-hand clothing platform, and Patagonia's old clothes recycling program are all concrete applications of the circular economy in the fashion industry. The sustainability of consumer relationships requires companies to disclose information in an open and transparent manner, carry out environmental education, and encourage consumers to participate, thereby fostering the concept of sustainable consumption among consumers and creating a responsible consumption culture. These four aspects complement each other to form a closed loop from design, manufacturing, sales to consumption and recycling, transforming the entire supply chain towards sustainable development.

4.4 Evaluation system for the sustainable transformation of fast fashion

The evaluation system for the sustainable transformation of fast fashion should be a multi-dimensional and multi-level comprehensive evaluation system, covering three aspects[14]: environmental performance, social performance and economic performance. Environmental performance indicators include quantifiable indicators such as carbon footprint, water footprint, waste generation, proportion of renewable materials used, and energy efficiency, as well as non-quantifiable aspects such as biodiversity conservation and chemical management. Social performance evaluation mainly focuses on employee rights protection, supply chain transparency, consumer rights protection, community development contribution, etc., and is achieved through certification by third-party institutions or social impact assessment. Economic performance evaluation takes into account not only traditional indicators such as profitability and growth, but also economic indicators reflecting the degree of sustainability, such as returns from sustainable investment, long-term value creation ability and risk resistance ability. The evaluation system should also have the function of dynamic tracking to reflect the transformation in a timely manner, identify the problems and propose improvement suggestions[15]. At present, there are relatively complete sustainable development evaluation methods such as GRI standards, SASB frameworks, and CDP ratings that can be referred to in the world. Enterprises should establish an evaluation system suitable for the fast fashion industry based on their own actual situation and industry characteristics.

5. Conclusions

Sustainable transformation of fast fashion business models is a necessary choice for the fashion industry to address environmental issues and take on social responsibilities, and an important way for enterprises to gain sustained competitive advantages. Based on a review of the literature related to sustainable transformation, this paper analyzes various internal and external reasons that prompt fast fashion enterprises to undertake sustainable transformation and proposes four transformation paths including ecological product design, green supply chain, circular business model, and sustainable consumer relationship. The sustainable transformation of fast fashion enterprises is not a simple technological innovation or product improvement, but involves changes in values, organizational culture, and business practices. Companies need to rethink the way they create value, shifting from focusing only on maximizing short-term benefits to pursuing long-term sustainable value creation, using technological innovation, model innovation, and management innovation to achieve unity of economic, environmental, and social benefits. Fast fashion companies in the future will pay more

attention to the quality and durability of their products, the transparency and responsibility of their supply chains, and the long-term value and experience of consumers. They will gain the trust of consumers, the support of investors, and the recognition of society through sustainable transformation, and obtain the impetus and support needed for sustainable development in the fierce market competition.

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