

# Conceptualizing Recycling Intention Behavior to Ecological Fashion Adoption Intention, Climate Justice as Mediator

Yee Chin Fong & Shathees Baskaran

International Business School, Level 10, Menara Razak, Universiti Teknologi Malaysia, Jalan Sultan Yahya Petra, 54100 Kuala Lumpur.  
Email: chinrong1993@graduate.utm.my

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## Abstract

The fashion industry forms an integral part of the global economy where the growth had benefited the world in terms of trade, employment, and income. However, rapid growth also leads to environmental and social impacts. Consumers' awareness of the impact of the fashion industry is raised and resulting in the emergence of ecological fashion. Circular fashion economies are encouraged to replace past unsustainable linear economies. Consumers play a key role in the implementation of a circular economy as a key factor in shifting the fashion company to adopt a sustainable business model. Thus, a conceptual framework is proposed to illustrate the potential of investigating the consumer ecological fashion adoption intention through the recycling intention behavior, and climate justice as a mediator.

**Keywords:** Fashion Industry, Circular Economy, Ecological Fashion, Recycling, Climate Justice.

## Introduction

As early as 1943, the importance of clothing had been recognized, as it is placed at the bottom of the pyramid of human needs, together with air, water, and food (Papamichael et. al., 2022). The global fashion industry is valued at \$ 1.5 trillion dollar, forming an integral part of the world economy. This industry is estimated to grow to \$ 2.5 trillion dollar by 2025 (Ikram, 2022). In terms of yearly revenue, clothing production is the third-largest manufacturing industry in the world (Buchel et.al., 2022). Over the last decades, the sizeable growth in clothing production had benefited low- and middle-income countries through economic growth and employment opportunities. Besides growing the income of many households, more affordable clothing is available for low-income households (Eppinger, 2022). Ellen MacArthur Foundation (2017) states that the fashion industry has provided employment for over 300 million people globally. However, clothing production grows exponentially estimated at doubled during the last decades (Ikram, 2022). According to Ikram (2022), the fashion clothing purchased are 25% more than in 2019.

In this era, fashion clothing evolved from humanity's needs to become the key means to individual expression (Bhandari et. al., 2022). The demand for fashion clothing is continuing to rise. With the rising of fast fashion trends and overconsumption, a large amount of waste is generated by the fashion industry. Aiming for a quick profit, the clothing had been planned and made for fast turnover trends instead of assessing the design and production to accommodate the customer's needs and sustainability. This business strategy turns the fashion industry into one of the most polluting sectors in the world (Centobelli et. al., 2022). According to Wren (2022), the fashion industry generated 2.1 billion metric tons of greenhouse gas emissions in 2018, leading to climate change. The social impact of the fast fashion trends follows when about 90% of the global clothing production shift to low- to middle-income countries. These fashion clothing are manufactured cheaply, at low quality, and generally criticized for creating hazardous working conditions for its workers (Bailey et al., 2022).

The transition to the circular fashion industry is of rising importance (Papamichael et. al., 2022). The circular business models which include reuse, redistribution, second-hand clothing resale and repair, and product-as-a-service models become a need (Centobelli et. al., 2022). According to World Economic Forum (2014), circular economy refers to 'an industrial system which is restorative or regenerative by intent and design'. Circularity enables the fashion industry to reduce the impact of fast fashion, protecting the natural environment while maintaining the profitability of the company (Dragomir & Dumitru, 2022). The authors further discuss that the massive players in the clothing sector had taken initiative in educating circularity while promoting recycling behavior among consumers. Overconsumption of clothing and disposal behavior that results from consumer behavior is directly affected by fast fashion trends that make the clothing industry one of the major contributors to climate change (Papamichael et. al., 2022). Climate justice is fundamentally focused on the way climate change influence differently, unevenly, and disproportionately, and also on restoring the subsequent injustices in just, fair, and equitable ways (Sultana. 2022). Considering the above, this paper conceptualizes recycling intention behavior to ecological fashion adoption intention, and climate justice as a mediator.

## **Literature Review**

### **Environment and Social Impact of Fashion Industry**

The rapid growth of the fashion industry has brought its environmental impact to light. Past research states that the production of clothing contributes to 10% of carbon dioxide (CO<sup>2</sup>) emissions, pollutes river streams, and dries up water resources (Ikram, 2022). Second to the oil industry, the clothing industry is the second most polluting industry, research suggested that only 1 % of the textile are recycled back to cloths, and the others end up as landfilling (Seetharaman et al., 2022). Each year, there is more than \$400 billion worth of clothes had been wasted globally (Shirvanimoghaddam et. al., 2020). According to United Nations, 20% of the waste produced worldwide are contributed by fast fashion, as 39,000 ton of unsold or thrown clothing gets trucked to the driest desert annually. 92 million metric tons of textile waste are generated from the clothing industry each year at the universal level (Papamichael et. al., 2022).

Apart from waste, a significant amount of microfiber is released into the oceans during the washing of certain types of clothing. Worldwide, the microfiber that releases into soil and oceans is estimated similar to 50 billion plastic bottles annually (Seetharaman, Shah, & Patwa,

2022). The plastic material, polyester has been used to make an estimated 60% of the clothing, and this clothing encounters 3 times CO<sup>2</sup> compared to cotton clothing (Ikram, 2022). Besides, as a global second most water intensive industry, clothing sectors consumes estimated 79 billion cubic meters of water yearly. According to World Wildlife Fund (2019), 20,000 litres of water is needed for production of one kilogram cotton.

Clothing also account for 1.2 billion tons of CO<sup>2</sup> in greenhouse gas emissions, which exceeds the emissions from global aviation industry and marine transportation sector (Ellen MacArthur Foundation, 2017). According to Ellen MacArthur Foundation (2017), the clothing industry will attribute one-quarter of the CO<sup>2</sup> emission globally by 2050 if the industry continues the same hazardous practices. CO<sup>2</sup> causes significant global warming and thus leads to an increase in the number of natural disasters including floods, droughts, storms, and the rise of sea levels (Centobelli et. al., 2022). Thus, Paris Agreement on Climate Change in December 2015 had been signed, and 195 countries agree to commit to keeping the rise of temperature less than 2 degrees Celsius (Abbate et. al., 2023).

Furthermore, with the rise of fast fashion, clothes are worn only a few times before being throwaway, which not only causes unnecessary environmental pollution but also social impact. Faster turnover of fashion trends and cheap clothing leads to low pay for the clothing industry worker. The manufacturer tries to keep the manufacturing cost lower resulting in the worker often working in hazardous working conditions (Ikram, 2022). Thus, the circularity should be demonstrated throughout the whole lifecycles of clothing to make fashion more sustainable.

### **Circular Fashion Economy**

The fashion industry is constituted upon a linear economy of 'take-make-use-throwaway' systems. These wasteful economic systems possess a destructive impact on natural devastation, economic loss, and risks to human society (Ki, Park, Ha- Brookshire, 2021). Circular Economy is built on industrial ecology (Ayres and Ayres, 2002) and ecological (Odum, 1988) related field when it was first mentioned in a book (Pearce and Turner, 1990). The Circular Economy is encouraged for application among industry society for economic prosperity and improves environmental quality. The circularity is moving towards the center stages in the fashion industry (BOF & McKinsey, 2021). In the fashion industry, the concept of circular economy is introduced as a promising way to reduce environmental impact by employing circular strategies through decreasing waste and efficient utilization of resources (BOF & McKinsey, 2021).

A circular economy defines classically as an economy that is capable regenerate, utilizing two types of resources or raw material (Dryzek, 2013; Commoner, 1971; Reday and Stahel, 1976). First, organic or renewable material that can recycle and re-enter the biosphere. Second, technical or non-renewable materials that are designed cyclically transform from manufacture to utilization, while maximizing the quality or value. Ellen MacArthur Foundation (2017) defines the circular economy as creating a regenerative or restorative industrial system through design and intention. Instead of the traditional end-of-life concept, restoration is applied to switch to using renewable resources. The exclusive design of raw materials, goods, systems, and business models are incorporated to eliminate toxic chemicals and waste. A circular economy indicated the concept that balances economic growth and protects the environment and resources from being overexploited (Gazzola et al., 2020). Thus, circularity is closely related to sustainability in the fashion industry. The sustainability and circular

economy create a base for long-term benefits through securing an economic system that is able to continue development and initiating profits (Raworth, 2017; Gazzola et al. 2020).

### **Ecological Fashion Adoption Intention**

The concept of ecological fashion or sustainable fashion is described as an element of the developing design philosophy and sustainable trends (Miśkiewicz, 2018). Ecological fashion refers to the fashion that leads to few or no environmental or social effects, while ethically produce through an ecological manufacturing system and design to extend the lifetime of use (Niinimäki, 2010). Miśkiewicz (2018) states that ecological fashion not only refers to the clothing using renewable or natural raw materials, but also the production process and the working condition of the workers. Fu (2019) states that the eco-fashion compost fashion textiles are designed to minimize negative effects on society and the environment starting from the fibers growing until the end of disposal.

Khandual and Pradhan (2019) explained that ecological clothing is considered to be classic or timeless, compared to the concept of the fashion product lifecycle that undergoes introduction, growth, maturity, and decline in a period. Ecological apparels have high longevity and move in a loop or circular manner as the clothing materials are being recovered over and over again eliminating waste (Khandual & Pradhan, 2019). The circular clothing is reused and recycled into new fibers while maintaining the highest possible value. Reuse and recycling can be raised through the framework offered by the closed-loop of circular economy, achieving sustainable goals in the fashion industry (Niinimäki, 2017). Gazzola et al (2020) stress that the attention toward sustainability and circular economy is influencing the fashion demand in the future.

### **Recycling Intention Behavior**

Previous literature states that the consumers handling their used or old clothing generally falls on three ways: keep them, temporarily disposal such as renting them and permanently disposal including discarding or recycling the clothing (Jacoby et al., 1977). Along with the rising of waste, it is vital and necessary for people to engage in recycling behavior (Hornik et al., 1995), which brings environmental advantages and economic savings compared to other disposal methods (White et al., 2011). Stern (2000) defines recycling as the method of an individual deal with the old stuff.

Global Change Award, by H&M Group (2020) had explained that recycling is one of the circular models that embrace circularity in the fashion industry. Thus, the recycling intention behavior is related to the circular and ecological fashion adoption. Previous researchers also relate the recycling intention behavior to ecological fashion adoption intention. Han, Hsu, and Sheu (2010) imply that consumer who engages in environmentally friendly activities such as recycling are more concerned about ecological issues and willing to change their adoption intention to a more ecological way. Similarly, Noh (2021) found that individuals with positive recycling attitudes may favor adopting pro-environmental practices.

### **Climate Justice**

According to Saraswat and Kumar (2016), climate justice refers to the concept of safeguarding fair treatment and independence from any kind of prejudice against the negative effects of climate change. The fundamental principles for climate justice proposed that society together share the responsibility for climate change right, fair, and just

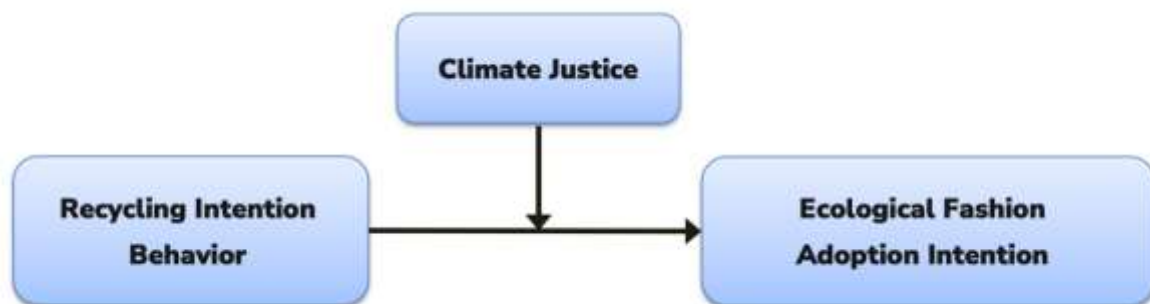
(Puaschunder, 2020). Mary Robinson Foundation (2019) connects climate justice with the rights of humans while achieving the development of a human-centered approach that safeguards peoples' rights and shares both benefits and burdens of climate change justly. Climate justice had been specified into two types, the 'burden-sharing justice' and the 'harm avoidance justice' (Caney, 2014). The first type of climate justice centers on how the duty-holders equally share the burden of addressing the climate crisis. The later type of climate justice concentrates on averting climate change while finding the solutions to prevent disasters caused by climate change.

Cohen (2018) argues that those who most suffer from the harmful impact of climate change are often not the ones who do the most toward the environment, this situation reflects clearly on climate injustice. Recent research had been conducted on climate justice activism, the authors suggested that behavior and action such as recycling had closely connected to the climate justice consciousness of an individual. The results also proved that individual who is aware of climate justice has a different level of knowledge of climate change and have practiced a range of actions in daily life to tackle climate change (Martiskainen et. al., 2020). Thus, individuals that care about climate justice will favor adopting pro-environmental practices in daily life. Given the above discussion, this study investigates the mediating role of climate justice upon the relationships between recycling intention behavior and ecological fashion adoption intention.

### Proposed Conceptual Framework

This research proposes a conceptual framework (refer to Figure 1) for determining the ecological fashion adoption intention with consumers' recycling intention behavior, climate justice as mediators.

Figure 1. Conceptual Framework



### Conclusion

Recycling refers to the collecting, disassembling, separating of the used materials, components, and products, and then processing them into recycled materials, components, and products (Beamon, 1999; Kuah & Wang, 2020). In the fashion industry, recycling activity includes resale, renting, donation, and reuse of garments (Shim, 1995). Previous literature suggested that recycling scores as the most suitable resolution engage in the circular economy (Rosa et al., 2019). Han et. al (2010) states that consumers who frequently engage in environmentally friendly activity including recycling have a higher intention to visit green hotels. Previous research states that the individual who possesses a positive attitude towards recycling may favor adopting pro-environmental practices (Noh, 2021). Do Paco and Raposo (2009) state that the consumer will favor a pro-environmental intention behavior as

ecological consciousness increases, and that customer is more likely to perform an environmentally friendly behavior. Thus, this study conceptualizing the relationship between the recycling intention behavior of consumers with the ecological fashion adoption intention.

Goldman et al (2018) state that recycling is known as the primary approach for reliable environmentally friendly behavior. Martiskainen et. al. (2020) found that pro-environmental behavior, such as recycling intention behavior is closely related to the individuals' consciousness of climate justice. Efforts for mitigating climate change are generally framed as collective action issues, in which progress can be achieved through lifestyle-changing of each person (Higham et al., 2019; Adger, 2003). In research on the way to configure individual climate change, carbon footprinting offers a worthwhile lens in the wider perspective of ecological consumption practices. Yu et. al. (2019) conducted research focusing on recycling behavior, as an environmentally friendly behavior that responded to climate change. The authors explain the need to transform into a new ecological worldview including the responsibility of people toward the environment in combating the climate change crisis. Based on the principle of fairness and justice, people are responsible for nature issues. Thus, the people who engage in recycling intention behavior show that they are aligned with the new ecological worldview mentioned above while being aware of climate justice.

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### **Corresponding Author**

Yee Chin Fong

Azman Hashim International Business School (AHIBS), Universiti Teknologi Malaysia (UTM)

Email: chinrong1993@graduate.utm.my

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