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Outpacing Fast Fashion: The Role of Social Information, Choice Architecture, and Policy in Shaping Sustainable Consumption

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**OUTPACING FAST FASHION:
THE ROLE OF SOCIAL INFORMATION, CHOICE ARCHITECTURE, AND POLICY
IN SHAPING SUSTAINABLE CONSUMPTION.**

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Abstract

Despite their strong prosocial and pro-environmental values, members of Gen Z are leading consumers of fast fashion in the US, with their patronage labeled as both an “addiction” and a “paradox” by the media. Across three studies, this dissertation explores behavioral science solutions to the fast fashion crisis among American Gen Z, while also reconsidering whether it should be characterized as an attitude-behavior gap. Chapter 2 investigates the effectiveness of evidence-based interventions, elite cues, and a combination of both on Gen Z’s beliefs, policy preferences, and behavioral intentions related to fast fashion. Chapter 3 assesses the relative impacts of price, environmental impact, and brand ethics on clothing purchase decisions, as well as the alignment between consumers’ stated and revealed preferences. Chapter 4 seeks to identify how to effectively present information about sustainability attributes on garment labels to encourage more sustainable choices among consumers. Key results suggest that Gen Z’s fast-fashion related beliefs and behaviors are responsive to evidence and elite cue interventions, while policy preferences are not. Interestingly, Gen Z consciously prioritizes price over sustainability attributes in clothing purchase decisions, and ethical considerations are as important, if not more so, compared to environmental impact. The alignment between Gen Z consumers’ stated and revealed preferences calls into question the validity of the “attitude-behavior gap” label when describing their consumption of fast fashion. Further, a combination of multiple translations of sustainability attributes alongside a composite sustainability rating on garment labels promotes sustainable consumption. Chapter 5 concludes the dissertation by discussing the policy and psychological implications of this work. In summary, addressing fast fashion will likely necessitate a hybrid policy approach that combines traditional economic policies with nudges from behavioral science.

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Chapter 1:

Introduction

Introduction

“The devil wears Shein,” reads the headline of a 2023 Business Insider article (Upton-Clark, 2023). Alongside its witty title, the article’s subtitle and opening line perfectly encapsulate the applied and theoretical foci of this dissertation, boldly asserting that “Gen Z’s addiction to fast fashion is destroying the planet,” while also noting, “everyone knows that Gen Z cares about the planet.” This chapter provides an overview of fast fashion and its harms before presenting a behavioral science conceptualization of the problem and potential solutions to it.

What Is Fast Fashion and Why Is It a Problem?

In his economic modeling of fashion cycles in 1995, Princeton economist Pesendorfer could not have foreseen the exponential growth of fast fashion in the following decade, which completely upended the status quo of annual or seasonal trend cycles (Pesendorfer, 1995). Fast fashion refers to the rapid production of inexpensive clothing items, typically lacking in durability and intended to be discarded after minimal use, with the lowest-priced items being treated as “nearly disposable” (Amed et al., 2023). Today, ultrafast fashion brands such as Shein release as many as 10,000 new designs per *day*, with these remarkable rates of production and consumption leading to tens of millions tons of waste every year (Amed et al., 2023; Bick et al., 2018; Niinimäki et al., 2020).

In contrast, sustainable fashion involves slower production rates, lower volumes of production, and is not typically associated with low prices. Sustainable clothing brands prioritize minimizing environmental impact and/or ensuring labor protections for garment workers (Henninger et al., 2016). Importantly, there are alternative ways to consume fashion sustainably beyond purchasing new clothing from sustainable brands. These include buying secondhand clothing and repairing existing garments (Jestratijevec & Rudd, 2018; Skinner et al., 2023).

Environmental Concerns

All phases of fast fashion's supply chain involve significant negative environmental impacts, including carbon dioxide (CO₂) emissions (the textile industry accounts for 8-10% of global greenhouse gas emissions), extensive water usage (amounting to 79 trillion liters), the release of toxic chemicals (many of which are carcinogenic) leading to chemical pollution, and the generation of waste accounting for 22% of mixed waste worldwide (for a comprehensive review, see Niinimäki et al., 2020). Of the 92 million tons of textile waste generated annually, a large proportion is either incinerated, landfilled, or exported to low- and middle-income countries (LMICs), often where fashion production occurs (Bick et al., 2018; Niinimäki et al., 2020).

As is often the case with climate hazards, the adverse environmental and health risks of fast fashion disproportionately impact individuals in LMICs compared to their counterparts in the Global North, despite the significant contribution of the latter to waste generation (Bick et al., 2018; Majumdar & Weber, 2023). For instance, the average American produces upwards of 40kg of textile waste annually (United States Environmental Protection Agency [US EPA], 2023).

Ethical Concerns

Beyond its significant environmental harms and environmental justice concerns, fast fashion is also under scrutiny for employing exploitative labor practices across its supply chains. In 2015, Human Rights Watch (HRW) investigated the working conditions of garment workers in Bangladesh, supplying clothing to major fashion brands in the United States (henceforth abbreviated as "US") and other countries. Based on interviews with 160 workers across 44 factories, the report documented workers being subjected to physical and verbal abuse (including sexual harassment), forced long hours, wage withholding, denial of restroom access, and

provision of unsanitary drinking water (HRW, 2015). Concerningly, the use of child labor in fast fashion supply chains has also been documented by the International Labour Organization (ILO) in numerous Asian and African countries (ILO, 2021).

Furthermore, garment workers face significant risks to their physical safety due to daily exposure to thousands of synthetic chemicals, many of which are carcinogenic, and the lacking safety standards in sweatshops (Ross, 2021). Consequently, fast fashion factories have been the scene of several deadly accidents, with the most well-known being the 2013 collapse of the Rana Plaza factory in Bangladesh which resulted in the loss of 1,100 lives (ILO, 2023; Paton, 2023). A European Parliament briefing on fast fashion after this accident referred to the harsh conditions faced by garment workers as “slave labor” (D’Ambrogio, 2014).

Although the majority of global fashion production occurs in LMICs, sweatshops are not confined to those areas. The US Department of Labor has reported instances within the US where garment workers earn as little as \$1.58 per hour, which is well-below the legal minimum wage (Rosalez, 2023). Many garment workers in American sweatshops, such as those in Los Angeles, are undocumented immigrants (Bunten, 2020).

Reactions from Governments and Media

In recent years, fast fashion has garnered growing scrutiny from governments worldwide, including from members of the US Congress. It also continues to be a prominent topic of discussion in popular media and on social media.

International Government Response

The European Union (EU) has taken substantial steps to tackle the fast fashion crisis, alongside plans to transition to a fully circular economy within the next decade (European Commission, n.d.-a, n.d.-c). Their key objectives include implementing design requirements to

prolong the lifespan of garments, ensuring repairability and recyclability in addition to durability, minimizing waste and other environmental impacts across the supply chain, enforcing worker protections, and holding producers accountable for their products and their effects on the environment and garment workers (European Commission, n.d.-a, n.d.-b, n.d.-c). The EU is also committed to promoting more sustainable clothing behaviors by raising awareness about fast fashion and providing consumers with resources to protect them against sustainability-related misinformation and disinformation, also known as “greenwashing.”

Member nations of the EU are also considering fiscal solutions to the fast fashion crisis, with France approving a bill imposing excise taxes on fast fashion in March 2024 (Spencer & Chappron, 2024). Beyond the EU, countries like the United Kingdom, Australia, and Brazil are also contemplating similar policies to deter the consumption of fast fashion (among other motives; see Sarfo, 2023).

US Government Response

While other countries, such as those in the EU, are in much more advanced stages of contemplating regulatory action against the fast fashion industry, the US government has been slower to respond. Recently, a bipartisan group of members of the US Congress petitioned the US Securities Exchange Commission to mandate the Chinese ultrafast fashion brand Shein to certify that it does not source raw materials from the Uyghur region in China, which has been tied to the use of forced labor (Meyersohn, 2023).

Social and Popular Media Response

While social media is a significant catalyst for fast fashion consumption, there exists a small yet slowly growing minority of influential voices (“influencers” or in this case, “greenfluencers”) who are challenging norms by raising awareness about the harms of fast

fashion, redirecting their followers to sustainable alternatives, and at times, discouraging overconsumption in general (Buzzo & Abreu, 2019; Jacobson & Harrison, 2022; McKeown & Shearer, 2019).

Ordinary consumers are also increasingly engaging with online discourse on sustainable fashion. According to an Ipsos Synthesio report, sustainable fashion comprises approximately a third of fashion-related online conversations in the US, with the volume of mentions increasing by double-digits since the previous year (Huff, 2022). The same report found that interest in secondhand clothing, thrifting, and upcycling (a portmanteau of “upgrading” and “recycling”) is also growing.

News and popular media have also extensively covered fast fashion over the last half-decade. Notably, many outlets have specifically attributed its exponential growth to Gen Z consumers (i.e., the generational cohort born in 1997-2012; Dimock, 2019). As quoted at the outset of this chapter, Business Insider asserts that “Gen Z’s addiction to fast fashion is destroying the planet” despite its concern for the environment (Upton-Clark, 2023). A Refinery29 article titled “Generation Z and the fast fashion paradox” similarly echoes the apparent disconnect between Gen Z’s pro-environmental values and their consumption of fast fashion (Abu, 2019). A Vox article titled “Gen Z doesn’t know a world without fast fashion” also notes that “there is an expectation foisted upon Gen Z to reform their shopping habits” (Nguyen, 2021). In a Harper’s Bazaar article on fast fashion, a Gen Z journalist writes, “my generation is a paradox,” referring to Gen Z’s consumption of fast fashion despite its endorsement of sustainability (Sangster, 2023).

Certainly, Gen Z’s pro-environmental values, concern, and activism for climate change have been established by numerous studies (Ballew et al., 2023; Tyson et al., 2021; Wood, 2022).

However, it is the characterization of their unsustainable consumption *in spite* of their values that is particularly intriguing and serves as one of the theoretical bases of this dissertation.

Importantly, the media is not alone in noting this seemingly paradoxical phenomenon, with many academic publications labeling the conflict between consumers' prosocial values and consumption of fast fashion as an attitude-behavior gap (Bray et al., 2011; Carrington et al., 2014; Gupta & Ogden, 2009; Joergens, 2006; McNeill & Moore, 2015; Nicholls & Lee, 2006; Park & Lin, 2020; Reimers et al., 2016). Many of these publications also note material constraints (such as cost) that influence consumers' fashion purchasing decisions. To its advantage, fast fashion is typically much more affordable than sustainable alternatives.

The next section of this chapter offers a behavioral science perspective on the market dominance of fast fashion despite consumers' sustainable values, and in doing so, calls into question the validity of labeling the phenomenon as an attitude-behavior gap.

A Behavioral Science Perspective on Fast Fashion

While it has been established that Gen Z constitutes a particularly prosocial and environmentally conscious demographic, it is also reasonable to assume that a majority of consumers, regardless of generation, would not inherently prefer to indirectly contribute environmental harm or support labor exploitation through their clothing choices. So, why does anyone who knows about the environmental and ethical concerns associated with fast fashion still consume it?

One compelling explanation is the absence of incentives to choose sustainable fashion over fast fashion in the current landscape, wherein sustainable clothing tends to be significantly more expensive and less accessible than fast fashion. Moreover, conscientious consumers would

need to invest considerable time and effort in researching brands to evaluate their sustainability performance, as there is currently no reliable, centralized resource for obtaining this information.

Indeed, prior research has shown that holding prosocial values does not necessarily translate to exhibiting prosocial behaviors in general (Hassan et al., 2016), in the environmental domain (Bamberg, 2003; Carrington et al., 2014; Corraliza & Berenguer, 2000; Hines et al., 1987; Kollmuss & Agyeman, 2002; Newell et al., 2014; Vieira et al., 2023), when personal costs incurred from being prosocial are high (Wyss et al., 2022), and specifically in the context of fashion (Joergens, 2006; McNeill & Moore, 2015; Park & Lin, 2020). These findings collectively evidence the idea that general attitudes do not predict specific behaviors (Ajzen, 1985, 1991; Ajzen & Fishbein, 1977; Bamberg, 2003; Fishbein & Ajzen, 1975; Greve, 2001; Minton & Rose, 1997). In the context of sustainable consumer behavior, holding a broad attitude like pro-environmentalism would not directly correspond to a specific behavior such as avoiding unsustainable products, especially since doing so results in increased personal costs.

So, should Gen Z's consumption of fast fashion be labeled an attitude-behavior gap based on their pro-environmental values? Arriving at a conclusive answer to this question necessitates a focused investigation of Gen Z's specific intentions and priorities regarding fashion, and whether these preferences explain directly related consumption behaviors. In particular, such an investigation should focus on attributes that distinguish fast from sustainable fashion.

Fashion purchase decisions, like most decisions, require tradeoffs on multiple dimensions. While attributes such as fit, style, color, material, brand, etc. are of paramount importance to fashion consumers, they are not dimensions along which tradeoffs must be made when deciding between fast and sustainable fashion. Instead, those decisions require tradeoffs between price, environmental impact, and ethical considerations. If general attitudes do not

predict specific behaviors, but fashion consumers consistently choose cheaper garments over expensive ones, it can be deduced that consumers prefer to minimize personal costs rather than maximize positive externalities. If true, would this behavior exemplify an attitude-behavior gap, or would it reflect rational economic behavior? The answer to this question has both meaningful theoretical and applied implications.

Examples of consumer behavior in various other domains including food, travel, household energy use, and online shopping offer parallels to fashion consumption in that consumers are required to determine the cost they are willing to incur to make decisions in line with their values. Engaging in behaviors such as avoiding flying, using public transit, driving electric vehicles, buying energy-efficient household appliances, conserving household energy, installing solar panels, and declining expedited shipping and delivery when shopping online all offer benefits to the environment and/or society. However, despite these positive externalities, consumers often prioritize other attributes such as cost, comfort, and convenience. For instance, while driving an electric vehicle or installing rooftop solar panels can reduce their carbon footprint, the costly initial investment may deter even pro-environmental consumers. Similarly, avoiding flying in favor of more sustainable modes of travel or opting for non-expedited shipping (e.g., Amazon's "no-rush" shipping) when shopping online may be better for the environment but consumers may rationalize opting for alternatives that offer greater comfort and convenience. Food choices offer another interesting parallel to fashion consumption. Purchasing Fairtrade certified products, which prioritize farmers' rights and adhere to certain environmental standards, may align with prosocial consumers' values. Similarly, opting for nutritious, home-cooked meals can not only promote health but may also be cost-effective. However, consumers who prioritize short-term convenience and timesaving may opt for fast food instead.

In these examples, including fashion consumption, convenience and affordability can outweigh ethical and environmental considerations, or even personal health benefits. Importantly, the apparent misalignment between general prosocial attitudes and consumption patterns in these domains may not reflect attitude-behavior gaps or irrational consumer behavior. While consumer rationality has been long-debated by researchers, “consumers become more rational as we are better able to predict their behavior” (Shugan, 2006). Indeed, if fashion consumers prioritize price over other values and also display awareness of this internal preference, then their choosing fast over sustainable fashion would not signal disparities between their attitudes and behaviors. Consequently, interventions aimed at changing attitudes may not be the most effective at discouraging the consumption of fast fashion or encouraging more sustainable choices. Instead, efforts may be better focused on directly intervening at the time of fashion purchase decisions by altering the choice environment.

The following subsections describe two overarching approaches to intervening on behaviors: changing minds and changing choice environments. Note that these approaches are certainly not mutually exclusive and can even be expected to reinforce each other.

Changing Behaviors by Changing Minds

This idea hinges on individuals, as consumers and voters, responding to new knowledge or normative cues by subsequently updating their beliefs, preferences, and behavioral intentions related to the problem. For this approach to succeed, discourse surrounding the problem must endure in the public sphere for an adequate duration and must also leave a lasting impression on individuals so that they are sufficiently motivated to update their behaviors when necessary (Paluck, 2009; Sunstein, 2017). Importantly, in the real world, this type of intervention typically

does not take place at the time of the decision¹ but rather occurs during some variable duration of time leading up to it.

Prior work has identified many successful behavioral science strategies to intervene on beliefs, policy preferences, and behavioral intentions (Constantino et al., 2022; Sparkman et al., 2021; Vlasceanu et al., 2024). These include social norms messaging interventions, providing successful examples of collective action, reducing psychological distance, reframing risks and responsibilities, emphasizing future self-continuity, and appealing to moral foundations, among others (Vlasceanu et al., 2024). Many of these interventions operate by prompting the target to contemplate the social consequences of their decision. For example, deviating from norms may result in the violator being socially ostracized, thereby creating an incentive to comply with the norm (Gelfand et al., 2024). In context, buying into an injunctive norm about the importance of demonstrating responsibility towards the environment and other citizens may compel consumers to avoid fast fashion.

Changing Behaviors by Changing Choice Environments

Considering that individuals hold a range of beliefs and values that can impact their decisions, albeit not all being active at the time of decision-making, choice architecture can assist in activating dormant goals. Rather than shaping individuals' beliefs, preferences, intentions, etc. prior to entering the decision space, the choice architecture literature illustrates how targets can be nudged towards socially desirable behaviors by altering their choice environments or the structure of decisions (Thaler & Sunstein, 2008). Nudges have been successfully deployed in

¹ Obviously in most experimental settings, behaviors are measured soon after the interventions are deployed. However, in the real world, this category of solutions essentially relies on the content of the intervention being internalized by the target before they enter the decision space. Certainly, there are exceptions. For example, normative cues can be effectively deployed at the time of the decision as shown in Goldstein et al., (2008), wherein hotel guests tended to reuse their towels upon learning that it was the norm.

numerous contexts and often function by simplifying information and increasing the salience of certain decision attributes or product characteristics, or reducing the mental effort required to adopt certain behaviors (Schubert, 2017; Thaler & Sunstein, 2008). For example, making organ donation and enrollment in 401(k) plans the default with the option to opt-out can drastically increase donation rates and retirement savings, respectively (Johnson & Goldstein, 2003; Thaler & Benartzi, 2004), and listing healthier menu items either on the top or bottom of lists can result in healthier food choices (Dayan & Bar-Hillel, 2011). Despite their success in various domains, nudges can sometimes fail and strategies that work in one context may not work in another (Congiu & Moscati, 2022; Schubert, 2017; Sunstein, 2017).

In the context of promoting sustainable fashion consumption, designing enhanced garment labels may help consumers quickly evaluate sustainable alternatives as superior to fast fashion. For example, reframing the cost of each option in terms of cost per wear may increase the favorability of sustainable fashion given its relative durability as compared to fast fashion. Alternatively, online stores may choose to display sustainable products above unsustainable ones, perhaps accompanied by eye-catching labels alluding to the environmentally friendly status of the former (Banerjee & Solomon, 2003; Hardisty et al., 2010; Kamenica, 2012; Lee et al., 2020; Roozen et al., 2021). These measures can influence consumer decisions even without conscious reflection on their part (Van Gestel et al., 2021). However, strong preexisting preferences and habits can render nudges ineffective (de Ridder et al., 2022; Sunstein, 2017). For example, frequent consumers of fast fashion may consistently turn to specific brands when purchasing clothes due to various reasons such as brand loyalty, positive past purchase experiences with those brands, and convenience (e.g., having the brand's app downloaded on

their devices). The normalized and habitual nature of fast fashion consumption among Gen Z may necessitate resorting to traditional economic policies (e.g., taxation).

It is important to note that the taxonomy of solutions (i.e., “changing minds,” “changing behaviors,” and “traditional economic policies”) used in this dissertation does not imply mutual exclusivity or suggest that one type of solution is definitively superior to the others. Rather, each category of interventions has its strengths and weaknesses. Certainly, there are also within-category differences in intervention effectiveness. For example, a meta-analysis of nudge interventions by Mertens et al. (2022) found that interventions that change the decision structure outperform those that focus on providing decision information or assistance (Mertens et al., 2022). Addressing the fast fashion crisis will likely require a strategic blend of interventions drawing from social psychology, choice architecture, and policy.

Population of Interest

Geographical Focus on the US

The US serves as the geographical focus of this dissertation for two main reasons. Firstly, it is a large consumer of fast fashion and unlike several other high-consuming nations that are in more advanced stages of policy discourse regarding fast fashion, the US government has only recently begun to demonstrate interest in this topic. Furthermore, congressional scrutiny at present is exclusively directed towards Shein, rather than the fast fashion industry as a whole, suggesting that industry-wide regulations are unlikely to be implemented in the immediate future. Hence, insights from the current research could potentially contribute to shaping the nascent discourse on regulating fast fashion in the country. Secondly, considering the size, global status, and cultural influence of the US, regulatory action against fast fashion could potentially catalyze a worldwide shift in the prevailing norms of the fast fashion industry.

Cohort Focus on Gen Z

Gen Z serves as the population of interest in all empirical studies described in Chapters 2, 3, and 4 of this dissertation. While the overconsumption of fast fashion or fashion generally is not inherently a generational problem, Gen Z is a particularly interesting group that is worth researching for the following reasons. Not only is Gen Z the top consumer of fast fashion in the country, but also their overconsumption appears to contradict their prosocial and pro-environmental values, as highlighted by numerous media outlets and academic publications. Crucially, fast fashion became normalized and habitual in the early stages of Gen Z's existence in the action space (i.e. presence as consumers within the fashion market), establishing it as the prevailing social norm for this generation. This is largely attributed to global supply-chain innovations, increased international trade liberalization, and the growth of e-commerce, all coinciding with consumer demand for low-cost garments (Taplin, 2014). Consequently, by the time Gen Z members entered the fashion market, fast fashion had already become widespread, leading to high rates of consumption. Older generations do not consume fast fashion at comparable rates, partly due to their own clothing purchase habits (which do not involve as much fast fashion, perhaps because they did not grow up with it) and fewer material constraints given the historically positive correlation between personal wealth and age (Shorrocks, 1975). Consequently, Gen Z shoulders most of the blame for the market dominance of fast fashion as evidenced by the media discourse reviewed earlier in this chapter.

More importantly, Gen Z is currently the target demographic for fast fashion brands, which heavily rely on social media to create and respond to trends and advertise their products, often through collaborations with influencers (Amed et al., 2024; Buzzo & Abreu, 2019). As digital natives, members of Gen Z are highly immersed in online fashion discourse, and therefore

exposed to conflicting narratives that both encourage the overconsumption of fast fashion and advocate against it (Amed et al., 2024). It is worth noting that unless fast fashion consumption norms change, the (over)consumption of fast fashion will likely persist in future generations also born in the digital age.

For populations with low awareness of the negative externalities of their behaviors, it seems intuitive to first focus on correcting said lack of knowledge. However, Gen Z presents a unique challenge because many of its members are already aware of and concerned by the harmful impacts of fast fashion yet continue to consume it. Therefore, understanding how to bridge the attitude-behavior gap (if indeed there is one) in Gen Z's consumption of fashion is especially compelling, as these insights could likely be extrapolated to other demographics that are less entrenched in fast fashion and more financially capable of switching to sustainable fashion.

Research Overview

This dissertation tests behavioral science solutions to the fast fashion crisis among Gen Z in the US and reexamines its characterization as an attitude-behavior gap. Three empirical studies span two general approaches to addressing the problem: one centered on changing behaviors by changing minds, and another focusing on altering choice environments to nudge consumers towards the socially desirable behavior.

Chapter 2 falls into the first category and tests interventions employing evidence versus political and social media elite cues on beliefs, policy preferences, and behavioral intentions related to fast and sustainable fashion. This chapter responds to recent US congressional scrutiny directed at Shein and seeks to leverage it as an institutional signal to dissuade the consumption of fast fashion. Similarly, it also considers social media elites—specifically, greenfluencers—as

agents to encourage sustainable behavior. Chapter 3 specifically addresses the question of whether Gen Z's consumption of fast fashion reflects an attitude-behavior gap. It employs two different preference elicitation techniques to examine the alignment between the stated and revealed relative importance of price, environmental impact, and brand ethics as attributes influencing clothing purchase decisions. Together, Chapters 3 and 4 advance research within the choice architecture category of solutions by attempting to determine the optimal presentation of sustainability attributes on garment labels, aimed at helping consumers make more sustainable choices. Chapter 5 concludes this dissertation with a general discussion of findings across the empirical studies, future directions for research, and commentary about the psychological and policy implications of this work.

Chapter 2:

Evidence and Elite Cues

Study 1 Background

This chapter explores how the beliefs, policy preferences, and actions of Gen Z consumers in the context of sustainable behavior are impacted by different types of information. As with other large scale collective action problems of our time, an effective response to climate change requires multilateral coordinated action from many actors including citizens, governments, and the private sector. Although psychological science has recently drawn both external and internal criticism for its focus on changing the behavior of individuals, people are critical stakeholders in the climate movement due to their simultaneous roles as consumers and voters (Caggiano et al., 2023; Chater & Loewenstein, 2022). This is especially true in the context of fast fashion, an industry that has been spurring overconsumption and waste at unprecedented levels over the last few decades while employing exploitative production practices and, consequently, has attracted international scrutiny from policymakers.

The Role of Social Norms in Fashion

Fashion is a psychologically interesting domain for three key reasons. First, (wearing) fashion is inherently a very visible behavior and severe departures from any norm (even if it is broadly construed) can be socially costly, especially for young people who are more susceptible to social disapproval (Brechwald & Prinstein, 2011; Davis, 1984; Gross & Vostroknutov, 2022; Laursen & Veenstra, 2021; Pesendorfer, 1995; Smith et al., 2015). Second, clothing norms are constantly changing—especially in recent years as trend cycles are increasingly fleeting and have given rise to “fast” fashion. Third, fashion marketing is extremely reliant on manipulating norm perceptions. Brands are heavily invested in carefully constructing narratives of desirability and need surrounding their products, trying to coax consumers into buying more clothes more often. As they continue to grow and achieve economies of scale, fast fashion brands have made

consumers accustomed to extremely low prices for clothes. Consequently, for consumers of fast fashion, the financial significance of buying clothes has rapidly diminished. Despite playing an obviously central role in the fast fashion crisis, clothing brands and their marketing divisions are not singularly responsible for the overconsumption of clothes. Even so, they are also not incentivized to increase their costs of production and lower profit margins by switching to sustainable materials and compensating garment workers well without external pressure, i.e., from consumers and/or policymakers, to do so. The fact that market forces alone cannot level the playing field between sustainable and fast fashion necessitates decisive action from stakeholders including consumers and the government (discussed later in this section).

Why Popular Norm Interventions May Fail in the Context of Fast Fashion

Consumer behavior in fashion is shaped by many social phenomena, including the influence wielded by social norms. Behavioral scientists have recently argued for psychology to fully consider the symbiosis between individuals and the social ecology that shapes them and which in turn is shaped by them. There are two conceptualizations of the relationship between norms and behaviors. On one hand, (descriptive) social norms are aggregations of individual behaviors, i.e., a normative behavior is one that is adopted by most (or many). On the other hand, people can only align their behaviors to what they *think* most others do, i.e., individual behaviors are responsive to perceptions of norms rather than actual norms.

Importantly, there is often a gap between actual and perceived norms, a well-documented psychological phenomenon known as pluralistic ignorance. Prentice and Miller (1993) identified a disparity between the discomfort students perceived among their peers regarding campus alcohol practices and their own level of discomfort. Geiger and Swim (2016) showed how perceptions of holding a minority opinion on climate change can lead to self-silencing, explained

by expectations of appearing incompetent. Misperceiving public opinion by underestimating concern about climate change among peers leads to public inaction on the issue (Constantino et al., 2022; Sparkman et al., 2022). While illuminating the actual norm can mitigate the misperception and motivate pro-environmental behaviors in some contexts, the problem of fast fashion is likely immune to this type of intervention since the objective reality is that the industry is thriving, at least based on fashion behaviors that are visible to individuals. In this context, Gen Z would be unlikely to display pluralistic ignorance regarding their peers' consumption of fast fashion given how normalized it is to them. Further, because the actual norm is unsustainable (i.e., most members of Gen Z consume fast fashion), correcting any pluralistic ignorance would be counterproductive.

While it may be true that most consumers would not personally support the mistreatment of garment workers, for example, this type of injunctive norm is not as discernible to the public compared to the very visible market dominance of fast fashion. The mere fact that fast fashion is as widely available as it is globally, communicates its acceptability to consumers. After all, fast fashion is permissibly sold in stores and online everywhere and consumers continue to buy from these brands. Under these circumstances, typical descriptive norm messaging interventions (e.g., suggesting something along the lines of “most Gen Z members do not endorse the consumption of fast fashion”) are unlikely to be effective.

Alternative types of norm interventions include highlighting how a prosocial behavior is growing in popularity. For example, Sparkman and Walton (2017) used dynamic norm interventions to discourage meat-eating despite high levels of meat consumption. Shifting attention away from the prevalent static norm (e.g., most people consume fast fashion) and onto the growing subset of consumers who reject said norm (e.g., the increasing popularity of thrifting

clothes) may be effective in the context of fashion, though arguably not as effective as it has been in other contexts where using trending norms have been successful (as in Mortensen et al., 2019). While this type of intervention may be effective in the vacuum of an experimental setting, it may not generalize well to the real world where the minority voice of sustainable fashion consumers is likely to be drowned out by stronger unsustainable trends. The dangers of communicating the prevalence of unsustainable norms like the consumption of fast fashion has been shown to decrease support for sustainable policies in some contexts (Rinscheid et al., 2021).

Considering that sustainable fashion tends to be exponentially more expensive than fast fashion, the upfront cost of buying new clothes from sustainable brands deter many consumers who prefer fast fashion even if it deteriorates sooner. Perceived material costs thus loom larger for consumers than perceived reputational benefits from making the socially desirable choice by consuming sustainable fashion. While noticing trending behaviors, even if currently adopted by a minority, can encourage others to embrace them by indicating shifting norms, this dynamic may not apply in the context of sustainable fashion (Constantino et al., 2022; Gelfand et al., 2024; Nyborg et al., 2016; Young, 2015). The knowledge that a small minority of consumers can consistently afford sustainable fashion is unlikely to result in a population-level shift towards it, because many consumers may either lack the financial means or be unwilling to pay the premium for sustainable fashion. Other ways to consume fashion sustainably (e.g., thrifting) can also be costly (in terms of effort) and may not be worth it for consumers who live in areas where secondhand clothing is inaccessible or for those who wear uncommon sizes, for example.

Yet, because fashion consumption is so intertwined with social norms, identifying effective cues and the appropriate agents to deliver those cues such that they may challenge the prevalent unsustainable norms is a worthwhile endeavor (Markowitz & Guckian, 2018). The

current work explores two potentially viable social information interventions aimed at discouraging fast fashion purchase intentions.

Evidence-Based Interventions in the Context of Fast Fashion

The first intervention is an evidence-based approach geared towards increasing factual knowledge about the harms of the fast fashion industry, with the expectation that this will trigger an internal evaluation of private stances on fast fashion. In essence, receiving specific information about the mistreatment of fast fashion workers could draw consumers' attention to their own opposition to forced labor, which may then spillover onto their perception of fast fashion and, consequently, their consumption of it. This bottom-up approach hinges on the alteration of a critical proportion of individual beliefs and behaviors until a society-level tipping point is reached (Centola et al., 2018; Efferson et al., 2020; Vlasceanu et al., 2018; Winkelmann et al., 2022).

Awareness-increasing interventions have been tested in various contexts to varying degrees of success (Abrahamse et al., 2005; Stadler et al., 2010; Zhong et al., 2020). Abrahamse et al. (2006) reviewed interventions for household energy conservation and found that while information tends to increase knowledge but does not necessarily increase conservation behavior or energy savings. However, rewarding conservation and providing frequent feedback can increase conservation. Stadler et al. (2010) found that equipping individuals with self-regulation strategies in addition to providing information can lead to longer-term behavioral change in the context of healthy eating. Zhong et al. (2020) found that increasing knowledge about COVID-19 increased optimistic attitudes regarding the pandemic and helped individuals comply with health protocols. In summary, while knowledge is an important determinant of behaviors, it may not be sufficient to change them (Weber, 2018). Moreover, agents may behave in socially undesirable

ways despite being aware of the harms of engaging in those behaviors, as may be the case with Gen Z and fast fashion.

Elite Cues as Interventions in the Context of Fast Fashion

The second intervention approach explored in this work supplies prosocial summary judgments via elite cues rather than providing factual information from which intervention targets can form their own judgments. In contrast to the evidence-based approach, leveraging elite voices to deliver powerful normative signals can alter private stances by incentivizing targets to align themselves with the supplied normative cue (or possibly to align themselves with the messenger and hence the cue). In the context of fast fashion, there are at least two categories of elite cues worth investigating: political elites and social media elites.

Political Elite Cues

Recently, the boom of fast fashion—especially the growing market dominance of Chinese-owned brands like Shein—has attracted attention from various governments (Masters, 2023). The EU initiated a crackdown on fast fashion by setting new design requirements for clothing to increase durability, repairability, and recyclability (European Commission, n.d.-a). Under the new EU laws, producers will need to shoulder responsibility for their sustainability and ethical practices throughout their supply chains. The erstwhile eco-design regulations will also be replaced by more informative digital product passports to help consumers make more sustainable choices (European Commission, 2023).

Notably, the EU itself has seemingly adopted an approach combining evidence and normative cues by launching “ReSet the Trend,” an initiative to raise awareness about fast fashion and “make it out of fashion” (European Commission, n.d.-b, see Figure 1). More interestingly, the delivery of this messaging by a powerful institution representing the populace

can update norm perceptions for people exposed to it beyond just the content of the message (Hodgson, 2006). Tankard and Paluck (2017) showed how a 2015 US Supreme Court ruling in favor of same-sex marriage led individuals to initially form more favorable attitudes towards gay marriage and gay people. This increase was nullified over time in a longitudinal study by the authors, but crucially, an increase in perceived social norms supporting gay marriage was sustained. Here, institutional decisions changed norm perceptions, which can change behaviors despite personal attitudes remaining unchanged (Tankard & Paluck, 2016, 2017).

Figure 1

Data published on the European Commission's webpage for their ReSet the Trend campaign.

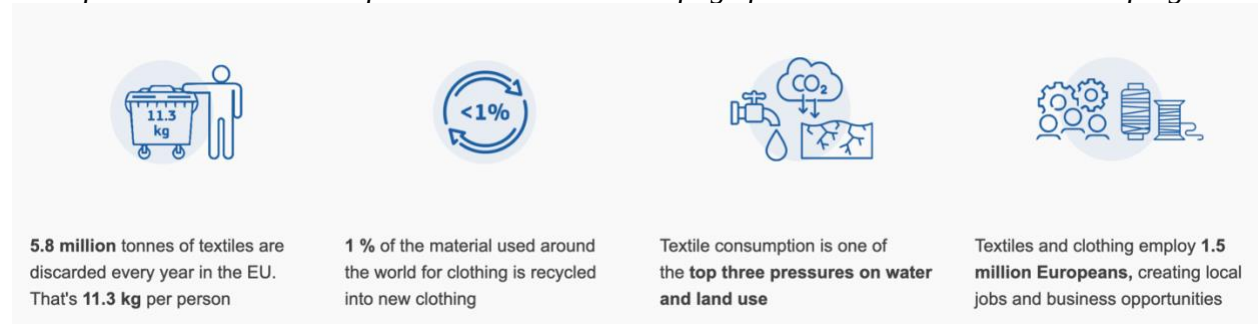


Image source: European Commission

Institutional signals in the form of policies may even give rise to social tipping points (Nyborg et al., 2016). The government control of cigarette smoking in the US is a great example of how concerted regulatory efforts can completely reverse a strongly prevalent but detrimental social norm (Bailey, 2004). In the context of fashion, policy can help change norms by leveling differences in price between fast and sustainable fashion through taxes and subsidies, for example (Constantino et al., 2022). As previously discussed, this type of exogenous change may be necessary for consumers to consider alternatives to fast fashion as viable. Indeed, for policymakers to regulate the fast fashion industry to this extent may require a certain threshold of

demand for such intervention from constituents. However, there is a paucity of literature on policy preferences in the context of fast fashion.

In the same way new policy measures can increase perceived norms of support for the approved measures, policy endorsements by political elites can also garner policy support from voters before any legislation is codified (Rinscheid et al., 2021). Both institutional signals effectively signal normative support for the policies in question. As Efferson et al. (2020) argue, there are two mechanisms by which interventions from policymakers can trigger change in decision-makers. One is a direct effect of being exposed to the intervention. The other is an indirect effect due to people's propensity to conform to the norm signaled by the intervention. Thus, the recently publicized US congressional scrutiny of Shein's links to forced labor can decrease the favorability of the brand in the eyes of American consumers both by bringing the allegations to their attention but also by signaling that the American public and the political figures who represent them take issue with fast fashion's exploitation of garment workers (Meyersohn, 2023).

Social Media Elite Cues

Social media has emerged as the primary arena of public discourse for political and social issues, and climate change is no exception (Pearce et al., 2019). Social media use has been shown to impact climate related knowledge, opinions, political views, and behaviors (Anderson, 2017; Basseches et al., 2022; Falkenberg et al., 2022). It has also been associated with the spread of mis- and disinformation related to climate change, highlighted as a threat to collective action against climate change in a recent report by the Intergovernmental Panel on Climate Change (Dubash et al., 2022; Khoo et al., 2022; Lasser et al., 2022). Much like political elites, influential social media figures may be able to signal and shape perceptions of social norms. This is

particularly plausible when social media users perceive these figures as relatable and/or representative of public opinion, or at least the opinions of their peers.

However, the role of social media elites in the sustainable behavior discourse has not been widely studied, despite their undeniable influence on consumption behaviors, especially among Gen Z due to their pervasive engagement with social media (Goldring & Azab, 2021; Pearce et al., 2019; Scholz, 2021; Stephen, 2016; Sun et al., 2021). Fast fashion trends and consumption are primarily borne from social media, as brands leverage the influence of social media elites to market increasingly shorter microtrends to consumers (Leung et al., 2022). The effectiveness of influencer marketing is rooted in the perceived relatability and closeness that social media users experience towards the influencers they follow. Research has shown that perceived closeness to norm referents is an important predictor of norm perceptions (Miller & Prentice, 1996; Paluck & Shepherd, 2012).

Just as brands have been harnessing influencers to promote fast fashion, activists and other concerned parties could employ similar strategies to combat fast fashion and encourage the sustainable consumption of fashion by increasing its issue salience. “Greenfluencers” or sustainability influencers have already begun to emerge, albeit still being in the minority when compared to voices that promote overconsumption. Parasocial relationships with greenfluencers positively relate to high-effort activism, with environmental knowledge moderating the relationship (Knupfer et al., 2023). Interestingly, lower popularity metrics may benefit greenfluencers by increasing perceived trust from consumers (Pittman & Abell, 2021).

Goals of the Current Work

This chapter examines the influence of evidence, elite cues, and a combination of the two on Gen Z’s fast fashion beliefs, policy preferences, and consumption behaviors. Beliefs are

important outcome variables because of their ties to behaviors and because managing public opinion is relevant to coordinating climate action. Measuring policy preferences accounts for consumers' dual roles as voters in a nascent but critical policy domain. Ultimately, the primary aim of this research is to identify avenues of influence on fast fashion consumption behaviors (specifically, lowering it or promoting the sustainable consumption of fashion).

The main independent variable is the type of information being provided, i.e., data evidencing the ethical concerns associated with fast fashion, and a distilled normative signal via elite cues. Importantly, neither the political nor social media elite cues elucidate specific facts regarding ethical violations within the fast fashion industry. Rather, their function in this design is to signal how the industry's ethical standards are perceived by the public. Note that the relative efficacy of the two elite cues will not be directly compared. Rather, each intervention type will be compared to a control and combination interventions will additionally be compared to their individual components.

Making specific claims about which political or social media figures would be more effective as deliverers of the elite cues exceeds the scope of the current study, as the study does not vary sources or source credibility for each type of intervention, variables that have been shown to influence the impact of the two types of elite cues in related contexts (DeBono & Harnish, 1988; Harkins & Petty, 1987; Lafferty & Goldsmith, 1999; Pornpitakpan, 2004; Slater & Rouner, 1996; Van Boven et al., 2018; Vlasceanu & Coman, 2022). Note also that the stimuli in the present study do not conceal their sources, and conditions combining evidence and elite cues do not misattribute the source of said evidence to those elite figures. Specifically, participants are not led to believe that the evidence is coming from the elite figures. The combination interventions are more so designed to simulate scenarios where individuals are

exposed to credible evidence and simultaneously receive elite cues which reinforce opinions formed based on factual information. This work is guided by the following hypotheses:

- Exposure to evidence (in the form of data) about the ethics of the fast fashion industry will (H1-A) worsen perceptions regarding fast fashion, (H1-B) increase policy support for improving labor conditions for fast fashion workers, and (H1-C) increase intentions to consume and willingness to pay more for sustainable fashion relative to a control.
- Combining data with an elite cue that is either (H2-A) political or comes from (H2-B) social media, will strengthen the effects described in H1.
- Exposure to a political elite cue will (H3-A) worsen perceptions regarding fast fashion, (H3-B) increase policy support for improving labor conditions for fast fashion workers, and (H3-C) increase intentions to consume and willingness to pay more for sustainable fashion relative to a control.
- Exposure to a social media elite cue will (H4-A) worsen perceptions regarding fast fashion, (H4-B) increase policy support for improving labor conditions for fast fashion workers, and (H4-C) increase intentions to consume and willingness to pay more for sustainable fashion relative to a control.

Study 1 Method

Open Science Practices

This study was preregistered at: https://aspredicted.org/87X_3KM. The data and code are available at: <https://github.com/rohinimajumdar/dissertation>.

Participants

A power analysis for independent-samples t-tests recommended 176 participants per condition to detect a moderate effect size of 0.30 with 0.80 power. Given that there were five

experimental conditions and one control condition, 1200 adults born after 1996 (to restrict the sample to Gen Z) but older than 18 years and residing in the United States were recruited via Prolific. 66 participants failed one or more attention checks and were not included in the analyses. 12 participants who misrepresented their age in the prescreen and reported their birth year as 1996 or earlier were also excluded. The final sample included 1128 participants of whom 47% were female, 48% were male, and 5% were non-binary, with an overall mean age of 23 years. All participants in the final sample passed the predefined exclusion criterion for not speeding.

Procedure

Participants were randomly assigned to one of six conditions: control, data, political, social, political + data, and social + data.

All participants were first presented with a definition of fast and sustainable fashion before receiving additional condition-specific stimuli (except in the control condition, where there were no additional stimuli). Following initial exposure to the stimuli, participants in experimental conditions answered a two-question pop quiz to ensure accurate retention of the stimuli. Key pieces of information were reinforced with feedback regarding whether respondents answered correctly. Subsequently, dependent variables and other variables of interest were measured before participants were asked questions assessing individual differences and demographic variables.

Dependent Measures

See Appendix A for more information about all dependent measures. 7-point Likert scales (where 1 = *strongly disagree* and 7 = *strongly agree*) were used unless specified otherwise.

Perceptions of Fast Fashion

This set of five statements gauged beliefs about the fast fashion industry. Specifically, whether: it employs exploitative labor practices, it negatively impacts the environment, its growth is concerning, it is acceptable to consume, and whether its treatment of garment workers constitutes modern day slavery. The last two statements were added after collecting 109 initial responses², and analyses involving them only include the 1019 responses collected subsequently. All 1128 responses are included in analyses involving the three original statements, though excluding the initial 109 responses does not impact the obtained pattern of results.

Sustainable Fashion Consumption Behaviors

Two questions measured participants' intentions to consume sustainable versus fast fashion in a hypothetical purchase scenario. The first item, presented as a multiple-choice question, measured willingness to pay more for a pair of jeans from a sustainable fashion brand compared to one from a fast fashion brand, priced at \$25. Answer choices included the options to either not pay more or pay up to \$30, \$35, \$40, \$45, \$50, or more than \$50 for the sustainable alternative.

A second question measured on a 5-point Likert scale (where 1 = *very unlikely* to 5 = *very likely*) asked how likely participants would be to consider buying a pair of jeans from a thrift store or online marketplace for secondhand clothing, versus either Shein and Temu (ultrafast fashion brands) or Forever 21 and H&M (fast fashion brands). These brands were selected for their dominance in the American fast fashion market. Responses to this question were binarized such that the former two options were coded as sustainable behaviors for analysis while the latter two were coded as fast fashion consumption behaviors.

² The inclusions were made upon observing the potential for ceiling effects in the former statements.

Policy Support

Participants indicated their level of support for or opposition to two policy statements. One proposed that fast fashion brands should be taxed for failing to transparently report labor practices. The second proposition involved requiring fast fashion brands to guarantee living wages for all garment workers. The language in these statements was refined for greater precision following the collection of 109 initial responses. Analyses that involve these items only include the 1019 responses collected subsequently.

Individual Differences and Demographic Variables

Participants' self-reported fashion consumption behaviors, personal importance placed on fashion, and prior awareness of the ethical and environmental concerns associated with fast fashion were included as individual difference measures. Demographic questions included age, gender, race, education level, income, political orientation, and political party affiliation. Given the expected variance in financial independence amongst the 18 to 26-year-old target sample, a question asking about their monthly budget for clothes was included to supplement the income measure.

Stimuli

See Appendix A for the complete stimuli. The source of any condition-specific information was revealed to participants in all experimental conditions.

Control

The control stimulus contained neutral information about the fashion industry's contributions to the global economy and definitions of fast and sustainable fashion. The definitions were carefully edited to minimize the use of value-laden language as much as possible while retaining both completeness and accuracy.

Fast fashion was defined as “inexpensive clothing produced rapidly by mass-market retailers in response to the latest trends” and sustainable fashion as “clothing that has been produced with a focus on minimizing environmental impact (e.g., low carbon emissions and water usage) and ensuring labor protections for garment workers throughout the supply chain.”

Participants were also provided with a disclaimer that there are many ways to consume fashion sustainably including re-wearing old clothes rather than buying new clothes, buying (or thrifting) secondhand clothing, and shopping sustainable brands when buying new clothes.

All other conditions presented the control stimulus in addition to condition-specific stimuli to ensure that all participants were initially given the same definitions of fast and sustainable fashion.

Data

Participants in the data condition read an excerpt from a brief published by the International Law Society at the George Washington University’s Law School³. The original excerpt was edited to remove value-laden language and present information regarding the treatment of fast fashion workers as objectively as possible. The excerpt mentioned low wages, long hours, the use of child labor, and unsafe factory conditions.

Political

The political condition presented a political elite cue in the form of a headline and excerpt from a CNN article titled “Congress presses Chinese fast-fashion giant Shein on forced labor”. The excerpt mentioned that a bipartisan group of US House of Representative members had launched a probe into Shein’s potential link to the use of forced labor.

³ The real source was revealed to participants in the interest of transparency and believability, but it can be argued that communications from elite institutions also constitute elite cues. Note, however, that the data conditions do cite specific facts actually evidencing ethical violations with the fast fashion industry, whereas the elite cue-only conditions do not.

Social Media

The social media elite cue was a screenshot of an Instagram post by a sustainable fashion influencer along with information about her social media following. Like the CNN article in the political condition, the Instagram post also focused on Shein and its alleged use of forced labor.

Data + Political

Participants in this condition were sequentially presented with stimuli from the data and political conditions.

Data + Social Media

Participants in this condition were sequentially presented with stimuli from the data and social media conditions.

Analysis Plan

The hypotheses described in the Background will be tested using independent samples t-tests and multiple regression models. The impact of each experimental condition on the dependent variables will be assessed by comparing it to the control condition (e.g., data versus control condition). Additionally, combination conditions will be compared to their respective component conditions (e.g., data + political elite cue versus data, and versus political elite cue). Furthermore, multiple regression models will include all experimental conditions (with the control condition as the reference level), demographic variables, and individual difference measures as predictors to yield average treatment effects. When appropriate, paired samples t-tests will be used to compare baseline prevalence levels of two dependent variables (essentially comparing their values in the control condition).

Study 1 Results

Effect of Interventions on Beliefs

Independent means t-tests were conducted to assess whether exposure to data and/or elite cues worsened perceptions of fast fashion. Multiple regression models regressing each belief on condition and all demographic and individual difference measures provided average treatment effects for each intervention (Table 1). Significance markers on violin plots in this section were sourced from these regression models.

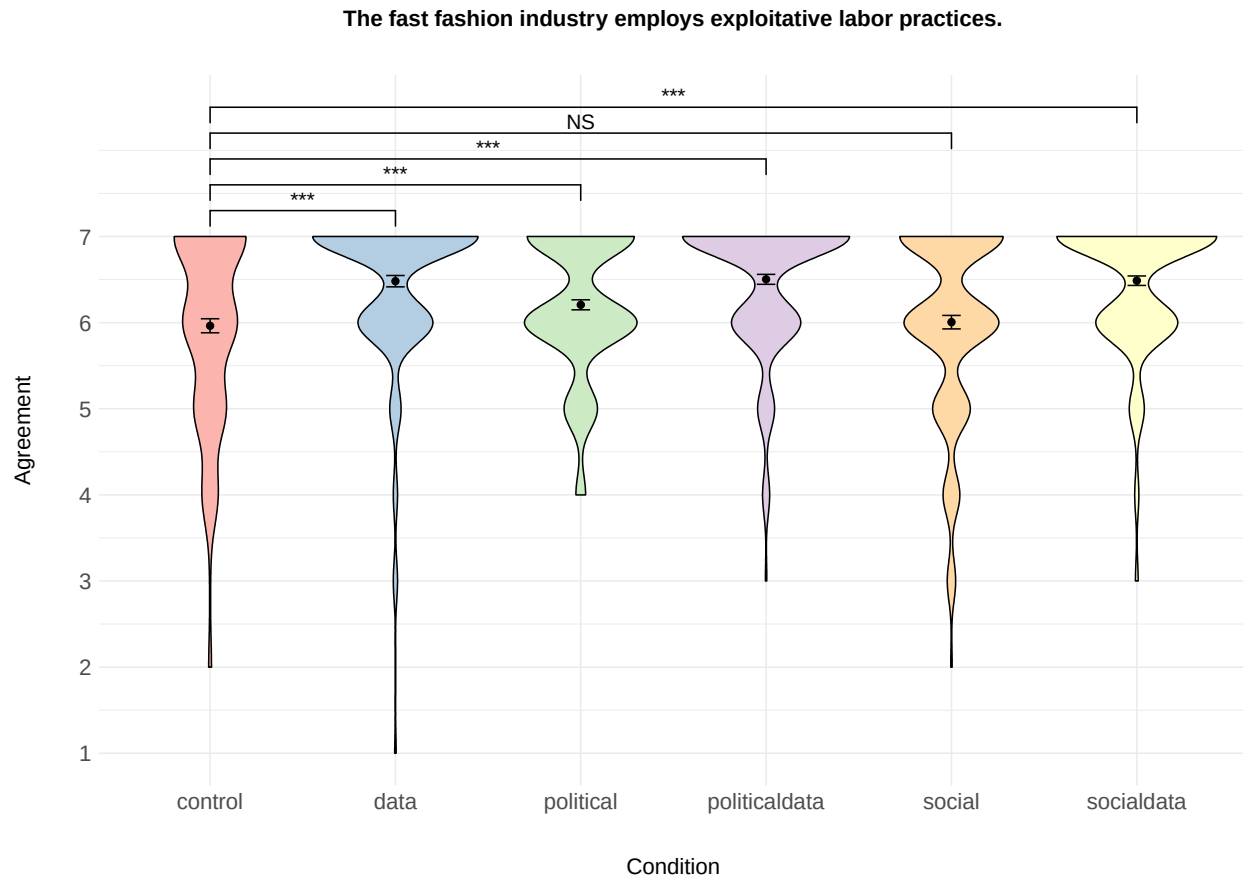
Exploitative Labor Practices

Mean agreement that fast fashion employs exploitative labor practices was higher in the data ($M = 6.48$, $SD = 0.89$, $t(355) = 4.95$, $p < .01$), political ($M = 6.21$, $SD = 0.80$, $t(338) = 2.43$, $p < .05$), political + data ($M = 6.50$, $SD = 0.78$, $t(334) = 5.41$, $p < .01$), and social + data ($M = 6.49$, $SD = 0.76$, $t(329) = 5.32$, $p < .01$) conditions compared to the control ($M = 5.96$, $SD = 1.12$). See Figure 2 for a visual comparison of conditions.

Mean agreement was also significantly higher in political + data compared to political ($t(371) = 3.62$, $p < .01$) and in social + data compared to social ($M = 6.01$, $SD = 1.08$, $t(335) = 5.01$, $p < .01$). Comparing the combined stimuli conditions to data alone did not reveal significant differences.

Figure 2

Effect of Treatments Relative to Control on the Belief that the Fast Fashion Industry Employs Exploitative Labor Practices



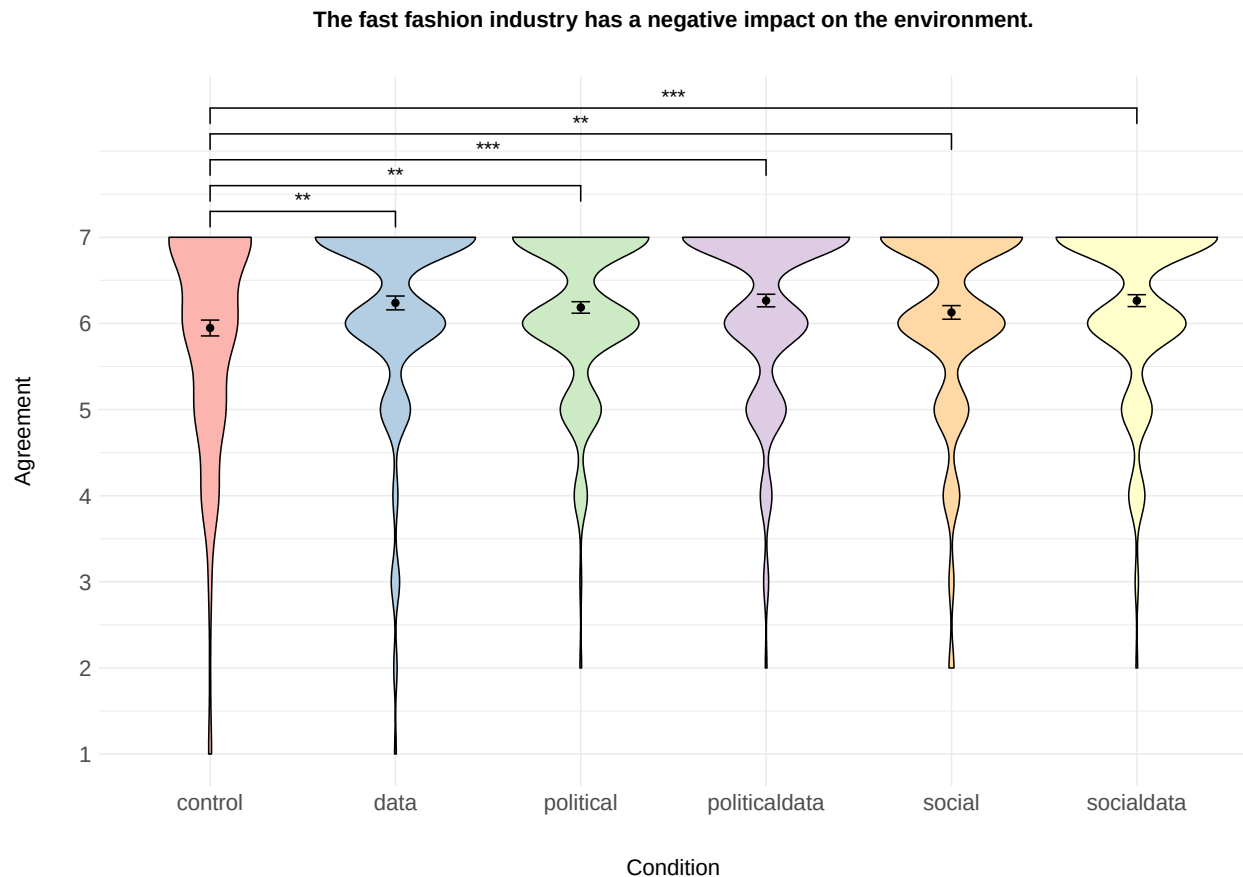
Negatively Impacts Environment

Mean agreement that fast fashion negatively impacts the environment was higher in the data ($M = 6.24$, $SD = 1.09$, $t(364) = 2.39$, $p < .05$), political ($M = 6.19$, $SD = 0.92$, $t(341) = 2.10$, $p < .05$), political + data ($M = 6.26$, $SD = 0.99$, $t(354) = 2.71$, $p < .01$), and social + data ($M = 6.26$, $SD = 0.97$, $t(350) = 2.75$, $p < .01$) conditions compared to the control ($M = 5.95$, $SD = 1.26$). See Figure 3 for a visual comparison of conditions.

Comparing the combined stimuli conditions (i.e., political + data and social + data) to the individual stimuli conditions (political, social, and data alone) did not reveal significant differences.

Figure 3

Effect of Treatments Relative to Control on the Belief that the Fast Fashion Industry Has a Negative Impact on the Environment



Growth is Concerning

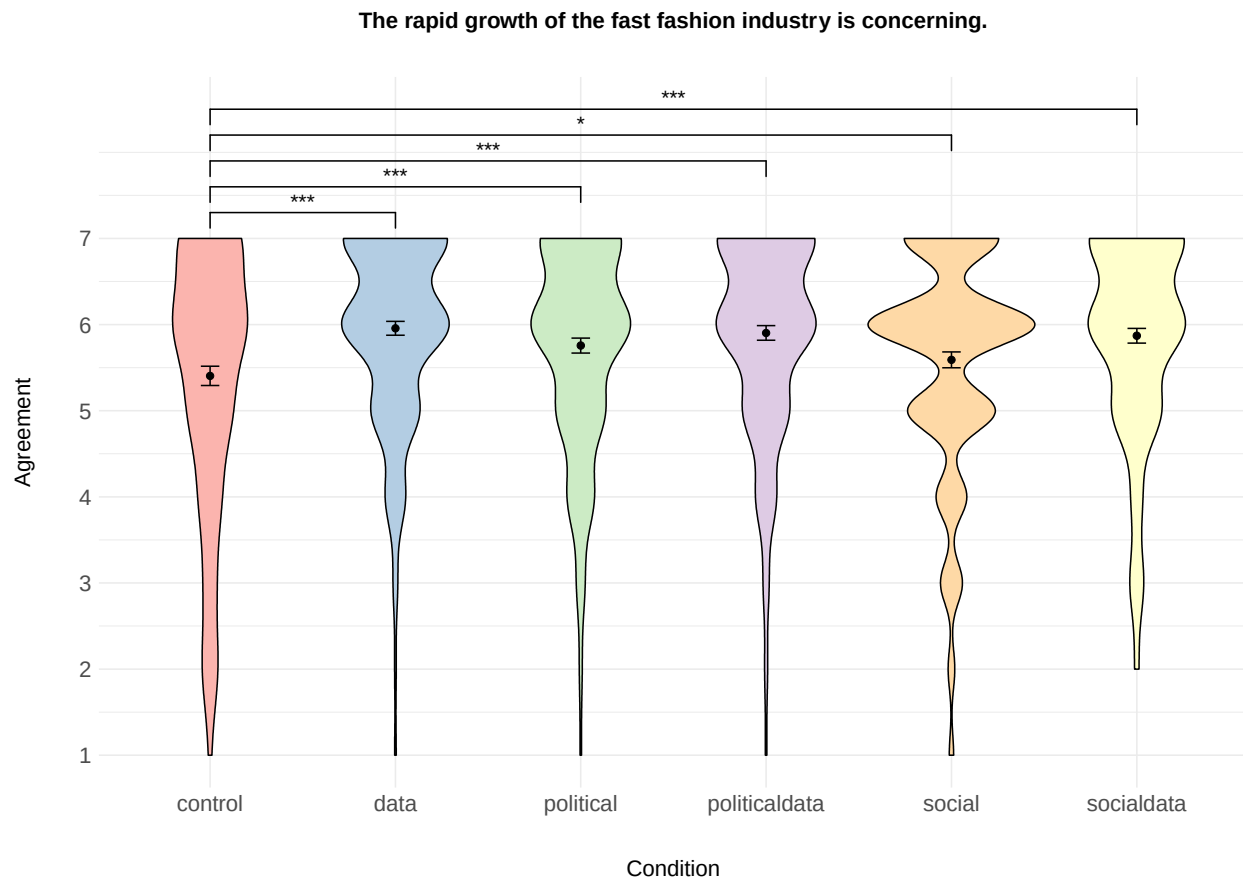
Mean agreement that the growth of fast fashion is concerning was higher in the data ($M = 5.96$, $SD = 1.09$, $t(337) = 4.02$, $p < .01$), political ($M = 5.76$, $SD = 1.19$, $t(352) = 2.49$, $p < .05$), political + data ($M = 5.90$, $SD = 1.15$, $t(347) = 3.55$, $p < .01$), and social + data ($M = 5.87$, $SD =$

1.19, $t(352) = 3.32, p < .01$) conditions compared to the control ($M = 5.40, SD = 1.53$). See Figure 4 for a visual comparison of conditions.

Comparing political + data to political and data, and social + data to data did not reveal significant differences. Mean agreement was significantly higher in social + data compared to social alone ($M = 5.59, SD = 1.26, t(376) = 2.24, p < .05$).

Figure 4

Effect of Treatments Relative to Control on the Belief that the Rapid Growth of the Fast Fashion Industry is Concerning



Constitutes Modern Day Slavery

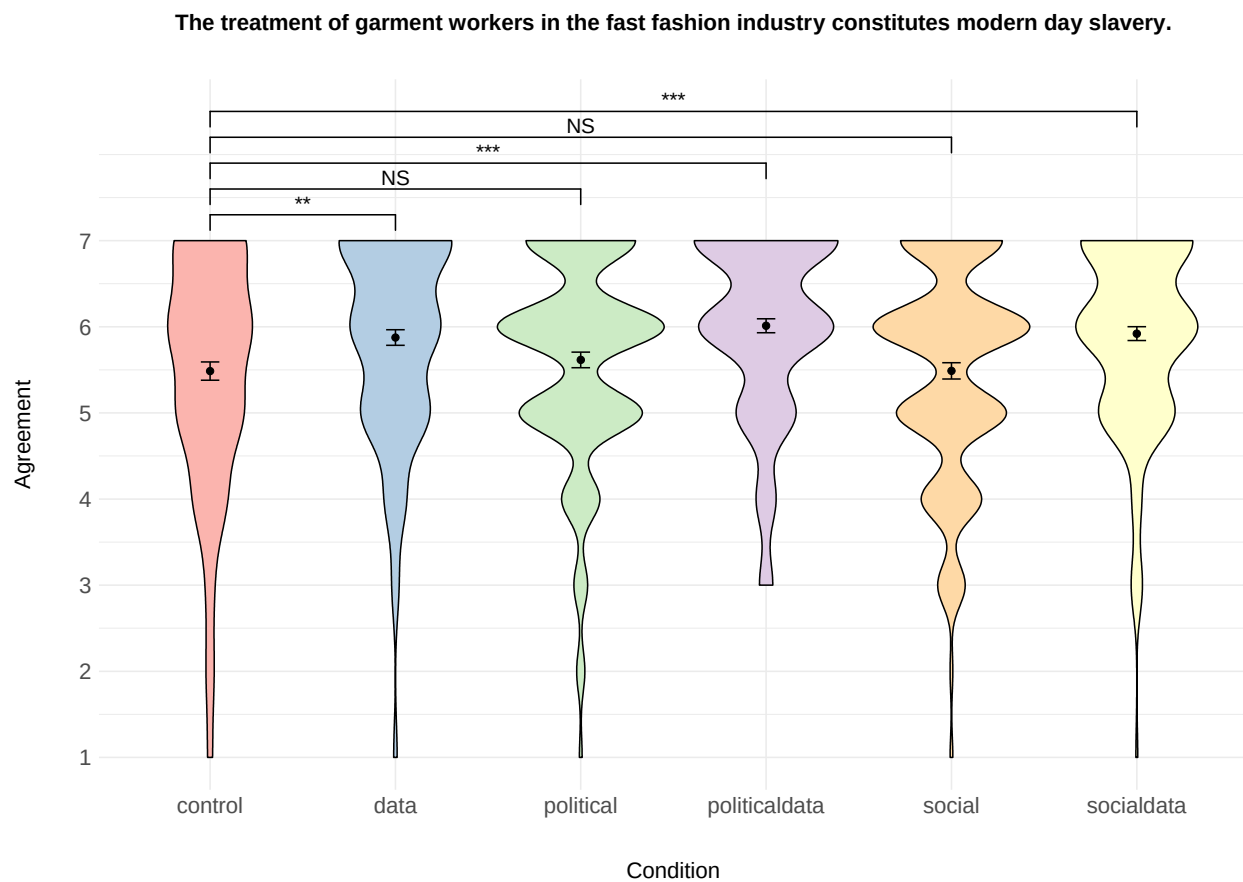
Mean agreement that the treatment of fast fashion workers constitutes modern day slavery was higher in the data ($M = 5.88, SD = 1.18, t(330.56) = 2.79, p < .01$), political + data

($M = 6.01$, $SD = 1.04$, $t(316.21) = 3.96$, $p < .01$), and social + data ($M = 5.92$, $SD = 1.06$, $t(319.26) = 3.27$, $p < .01$) conditions compared to the control ($M = 5.49$, $SD = 1.38$). See Figure 5 for a visual comparison of conditions.

Mean agreement was significantly higher in political + data compared to political ($M = 5.62$, $SD = 1.18$, $t(330.54) = 3.27$, $p < .01$), and in social + data compared to social ($M = 5.49$, $SD = 1.23$, $t(329.9) = 3.48$, $p < .01$). Comparing the combined stimuli conditions to data alone did not reveal significant differences.

Figure 5

Effect of Treatments Relative to Control on the Belief That the Treatment of Garment Workers in the Fast Fashion Industry Constitutes Modern Day Slavery



Acceptable to Consume

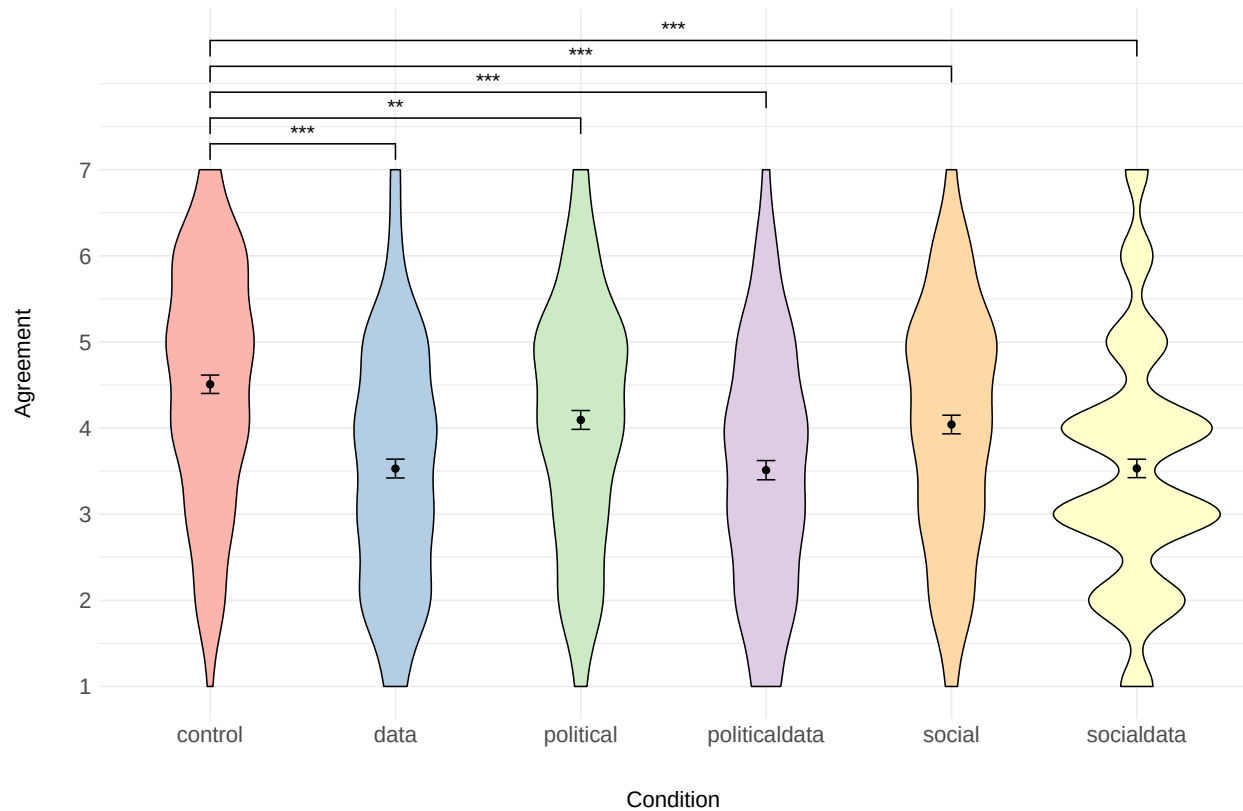
Mean agreement that it is acceptable to consume fast fashion was lower in the data ($M = 3.53$, $SD = 1.42$, $t(336) = -6.39$, $p < .01$), political ($M = 4.09$, $SD = 1.42$, $t(337) = -2.70$, $p < .01$), political + data ($M = 3.51$, $SD = 1.44$, $t(336) = -6.45$, $p < .01$), social ($M = 4.04$, $SD = 1.40$, $t(336) = -3.07$, $p < .01$), and social + data ($M = 3.53$, $SD = 1.41$, $t(343) = -6.46$, $p < .01$) conditions compared to the control ($M = 4.51$, $SD = 1.40$). See Figure 6 for a visual comparison of conditions.

Comparing the combined stimuli conditions to data alone did not reveal significant differences. However, mean agreement was significantly lower in political + data compared to political ($t(334) = -3.73$, $p < .01$), and in social + data compared to social ($t(340) = -3.36$, $p < .01$).

Figure 6

Effect of Treatments Relative to Control on the Belief That It Is Acceptable for Consumers to Buy Clothes from Fast Fashion Brands

It is acceptable for consumers to buy clothes from fast fashion brands.



Average Treatment Effects on Beliefs

Since participants were randomly assigned to treatment conditions, regression coefficients for each condition from models including all conditions and control variables are interpreted and presented as average treatment effects (ATEs) in Table 1. On average, the political + data and social + data conditions have the highest ATEs on beliefs with data alone performing comparably or only slightly worse.

Table 1

Average Treatment Effects on Beliefs Controlling for Demographics and Individual Differences

Belief	Average Treatment Effect				
	Data	Political	Political + data	Social	Social + data
Exploitative labor practices	0.47	0.30	0.55	-	0.53
Negatively impacts environment	0.25	0.27	0.37	0.26	0.33
Growth is concerning	0.51	0.40	0.56	0.28	0.50
Constitutes modern day slavery	0.35	-	0.51	-	0.43
Acceptable to consume	-0.96	-0.44	-1.03	-0.53	-1.02

Note: Only statistically significant coefficients are reported.

Effect of Interventions on Policy Support

Independent means t-tests and multiple regressions controlling for demographics and individual differences did not detect significant differences between policy support in the control and experimental conditions. Untreated participants in the control condition were generally in favor of requiring transparency from fast fashion brands ($M = 5.36$, $SD = 1.48$) and requiring fast fashion brands to guarantee living wages for workers ($M = 6.03$, 1.23). A paired-samples t-test comparing the baseline support (as measured in the control condition) for levying a tax on brands that fail to transparently report labor practices was lower than support for requiring brands to guarantee living wages even if it would increase costs for consumers ($t(170) = -6.44$, $p < .01$).

Effect of Interventions on Behaviors

While independent means t-tests did not detect significant differences, controlling for the demographics and individual differences (preregistered as exploratory analyses) in multiple regression models revealed that some behaviors were responsive to certain types of interventions and correlated with a small number of control variables, as described below.

Willingness to Pay More

No interventions were effective in increasing willingness to pay more for sustainable fashion. Women ($b = 0.32$, $SE = 0.11$, $t(1099) = 2.84$, $p < .01$), White people (compared to mixed race, $b = -0.41$, $SE = 0.15$, $t(1099) = -2.64$, $p < .01$; Latinx, $b = -0.37$, $SE = 0.18$, $t(1099) = -2.04$, $p < .05$; Black, $b = -0.78$, $SE = 0.17$, $t(1099) = -4.68$, $p < .01$; and Asian people, $b = -0.41$, $SE = 0.14$, $t(1099) = -2.87$, $p < .01$), those with higher incomes ($b = 0.06$, $SE = 0.02$, $t(1099) = 3.27$, $p < .01$), those who are more educated ($b = 0.09$, $SE = 0.03$, $t(1099) = 2.78$, $p < .01$) and politically liberal ($b = 0.15$, $SE = 0.05$, $t(1099) = 3.34$, $p < .01$), existing consumers of sustainable fashion ($b = 0.26$, $SE = 0.12$, $t(1099) = 2.25$, $p < .05$), those who place importance on personal style ($b = 0.12$, $SE = 0.06$, $t(1099) = 2.01$, $p < .05$), and those who were already aware of environmental concerns associated with fast fashion ($b = 0.38$, $SE = 0.07$, $t(1099) = 5.45$, $p < .01$) were more likely to pay premiums for sustainable fashion.

Intention to Purchase from Fast Fashion Brands

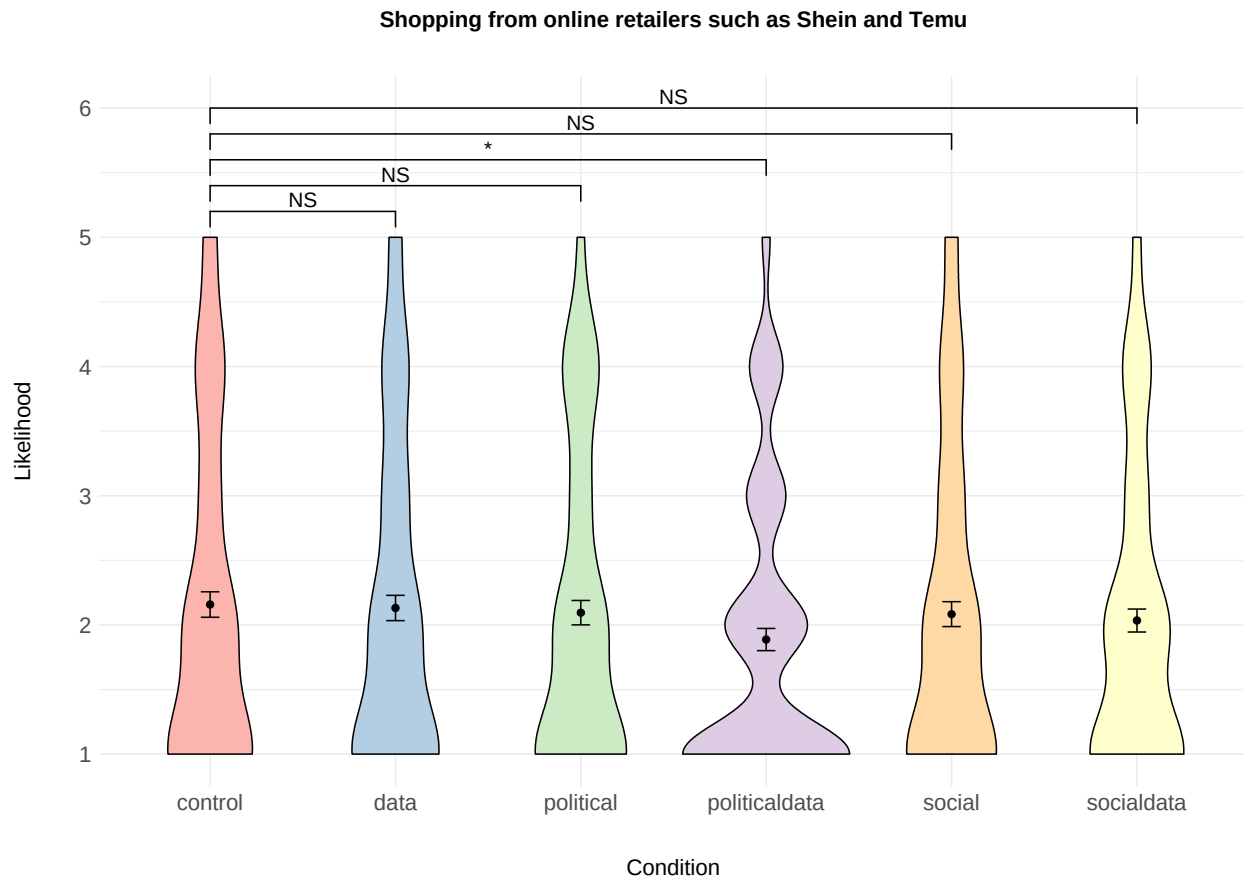
Participants in the political + data condition ($M = 1.90$, $SD = 1.11$) were less likely than those in the control condition ($M = 2.12$, $SD = 1.26$) to consider buying from fast fashion brands like Shein and Temu in the hypothetical purchase scenario, $b = -0.25$, $SE = 0.12$, $t(1099) = -2.08$, $p < .05$ (see Figure 7).

Women ($b = -0.15$, $SE = 0.08$, $t(1099) = -2.01$, $p < .05$), political liberals ($b = -0.09$, $SE = 0.03$, $t(1099) = -2.97$, $p < .01$), and those who were already aware of ethical ($b = -0.14$, $SE = 0.05$, $t(1099) = -2.93$, $p < .01$) or environmental concerns ($b = -0.1$, $SE = 0.05$, $t(1099) = -2.17$, $p < .05$) associated with fast fashion were less likely to consider buying from these brands, whereas former consumers of fast fashion ($b = 0.37$, $SE = 0.08$, $t(1099) = 4.66$, $p < .01$) and those who reported trying to keep up with fashion trends ($b = 0.13$, $SE = 0.03$, $t(1099) = 3.60$, p

< .01) were more likely to consider buying from the same brands. Black participants were also more likely than White participants to consider buying from these brands ($b = 0.35$, $SE = 0.11$, $t(1099) = 3.04$, $p < .01$).

Figure 7

Effect of Treatments Relative to Control on the Intention to Purchase Fast Fashion from Shein or Temu



However, no treatments were effective in lowering intentions to buy from other fast fashion brands like Forever 21 and H&M. Rather, former consumers of sustainable fashion ($b = -0.31$, $SE = 0.08$, $t(1099) = -4.06$, $p < .01$), those with bigger monthly budgets for clothing ($b = -0.001$, $SE = 0.00$, $t(1099) = -2.51$, $p < .05$), and those who place more importance on personal style ($b = -0.10$, $SE = 0.04$, $t(1099) = -2.61$, $p < .01$), were less likely to consider buying from

these brands in the hypothetical purchase scenario. Conversely, Black participants (compared to White participants, $b = 0.23$, $SE = 0.11$, $t(1099) = 2.14$, $p < .05$), those who had more recently shopped for clothes ($b = 0.07$, $SE = 0.04$, $t(1099) = 2.08$, $p < .05$), former consumers of fast fashion ($b = 0.92$, $SE = 0.07$, $t(1099) = 12.38$, $p < .01$), and those who try to keep up with fashion trends ($b = 0.10$, $SE = 0.03$, $t(1099) = 2.95$, $p < .01$) were more likely to consider buying from the same brands.

Intention to Purchase Secondhand (Sustainable) Fashion

No interventions were effective in increasing in-store thrifting intentions. Women ($b = 0.17$, $SE = 0.07$, $t(1099) = 2.44$, $p < .05$), existing consumers of sustainable fashion ($b = 1.26$, $SE = 0.07$, $t(1099) = 17.83$, $p < .01$), and those who were already aware of the environmental concerns with fast fashion ($b = 0.09$, $SE = 0.04$, $t(1099) = 2.04$, $p < .05$) were more likely to consider thrifting in the hypothetical purchase scenario, whereas those with higher incomes ($b = -0.05$, $SE = 0.01$, $t(1099) = -4.15$, $p < .01$) and past consumers of fast fashion ($b = -0.22$, $SE = 0.07$, $t(1099) = -3.11$, $p < .01$) were less likely to do so.

Participants in the social + data condition ($M = 3.41$, $SD = 1.24$) were more likely than those in the control condition ($M = 3.18$, $SD = 1.36$) to consider buying from online secondhand marketplaces in the hypothetical purchase scenario, $b = 0.29$, $SE = 0.12$, $t(1099) = 2.40$, $p < .05$ (see Figure 8).

Unusually, participants politically affiliated with the Republican party (compared to Democrats, $b = 0.33$, $SE = 0.15$, $t(1099) = 2.18$, $p < .05$) and more politically liberal participants ($b = 0.08$, $SE = 0.03$, $t(1099) = 2.32$, $p < .05$) were each more likely to consider buying secondhand online, as were existing consumers of sustainable fashion ($b = 1.03$, $SE = 0.08$, $t(1099) = 12.62$, $p < .01$) and those who place more importance on personal style ($b = 0.11$, $SE =$

0.04, $t(1099) = 2.57, p < .05$). Consumers of fast fashion ($b = -0.31, SE = 0.08, t(1099) = -3.90, p < .01$) and those with higher income ($b = -0.03, SE = 0.01, t(1099) = -2.46, p < .01$) were less likely to consider secondhand online shopping.

Figure 8

Effect of Treatments Relative to Control on the Intention to Purchase Secondhand Clothes from Online Marketplaces



Prior Awareness of Ethical and Environmental Concerns

The mean prior awareness of ethical concerns with fast fashion ($M = 3.78, SD = 1.13$), measured on 5-point Likert scale, was higher than that of environmental concerns ($M = 3.58, SD = 1.14$), $t(1127) = 8.46, p < .01$. Participants were moderately aware of both criticisms of fast fashion, consistent with expectations for the Gen Z sample.

Study 1 Discussion

This chapter examined the effect of receiving evidence and elite cues, separately and in combination, on Gen Z's beliefs, policy preferences, and behavioral intentions related to fast fashion. The main hypotheses tested were whether each intervention type performed better than a control condition, which contained neither evidence nor norm signals. While the two elite cue conditions were not compared to each other, the combination conditions were compared to their components to see if providing both types of information simultaneously was more effective than providing either type individually.

Beliefs were most responsive to treatment, changing by an effect size magnitude of 0.25 to 1.02 compared to control. Conditions where data were provided (i.e., data, political + data, social + data) influenced all beliefs, while the political elite cue alone changed all beliefs except the notion that the treatment of fast fashion workers constitutes modern day slavery. The social media elite cue alone also did not significantly influence this belief. Somewhat surprisingly, it also did not impact the belief that fast fashion employs exploitative labor practices. These results generally support hypotheses H1-A, H3-A, and H4-A about the effect of the data, political, and social media elite cue interventions on beliefs, respectively. Combining data with elite cues only slightly increased average treatment effects (ATEs) for most beliefs (except the belief that the growth of the fast fashion industry is concerning, where the ATE of data alone was greater or equal to that of the combination interventions), lending weak support for hypothesis H2 about the enhanced effect of the combination interventions on beliefs. The acceptability of consuming fast fashion was most responsive to treatment with ATEs ≈ -1.0 for all three interventions with data. The effectiveness of providing data alone in changing beliefs is somewhat inconsistent with

prior work finding that disseminating scientific information on climate change did not influence public opinion, which was instead majorly influenced by elite cues (Carmichael & Brulle, 2017).

Interestingly, although the intervention stimuli focused on ethical concerns related to fast fashion, all treatments (except the social media elite cue alone) also strengthened the belief that fast fashion negatively impacts the environment. This finding points to the possibility of spillover effects where changes in closely related beliefs co-occur. The idea that psychological variables such as beliefs, attitudes, and norm perceptions may be mutually influencing as part of complex systems has previously been explored by psychologists in the psychometric networks, Causal Attitude Network, and norm network literatures (Borsboom et al., 2021; Brandt et al., 2019; Dalege et al., 2016; Sparkman & Weber, 2023).

If beliefs about the ethical and environmental concerns associated with fast fashion are mutually influencing, then normative cues about either set of concerns can doubly affect beliefs regarding the acceptability of consuming fast fashion. This can further lead to lower consumption of fast fashion but only if beliefs are predictive of behaviors in this context. Of course, material constraints like cost may prevent the behavioral change in Gen Z and other lower-income consumers. This is supported by the finding that despite the fact that prior awareness for both ethical and environmental concerns was already relatively high in the sample, more than 70% of participants were consumers of fast fashion and the mean premium they were willing to pay for a sustainable alternative to fast fashion was \$35-40. Given the high costs of sustainable fashion in the current market, this additional amount is unlikely to suffice.

The observation that the social media elite cue alone was the only treatment to *not* impact the belief that fast fashion employs exploitative labor practices may have been due to the possibility of Gen Z members already being familiar with the discourse around the ethics of fast

fashion on social media such that the stimulus did not contain novel information. However, supplying data alongside the social media elite cue had the second largest treatment effect (0.53) on the belief in question compared to other treatments. T-tests comparing the social media + data intervention to the individual social media elite cue intervention revealed significant differences in four out of five beliefs. These results generally support hypothesis H2-B and suggest that citing specific evidence from credible sources may bolster the influence of social media elites engaging in this discourse. For example, when criticizing the fast fashion industry for its ethical practices, influencers should consider referencing specific and credible information that supports their criticisms. This is also recommended for political elites since the results show that combining political elite cues with data (H2-A) is significantly more influential than the political cue alone for three out of five of the beliefs. Given that politicians have been known to share untrustworthy information on social media platforms, citing credible sources should be especially beneficial by way of increasing public trust (Bräuninger & Marinov, 2022; Janssen & van Gog, 2023; Lasser et al., 2022; Mosleh & Rand, 2022).

Unlike beliefs, the two policy support items did not respond to any treatments. Analyzing the spread of each item did not confirm the presence of ceiling effects, especially since the tested interventions successfully strengthened beliefs that were rated similarly on the Likert scale. Examining baseline support for each policy revealed that participants were generally in favor of both proposals but significantly preferred the one involving guaranteed living wages for garment workers even at an increased cost to consumers over the one penalizing brands that fail to transparently report their labor practices. In other words, consumers seemingly care more about improving conditions for garment workers than penalizing brands for unethical practices. This preference is reminiscent of survey research and real-world data on the unpopularity of carbon

taxes among voters both in the US and internationally (Carattini et al., 2018, 2019; Gleckman, 2018; Lucas, 2017). Rather than taxing emissions, which effectively allow emitters who can afford it to continue emitting at the same level, voters prefer mitigation policies that would prevent emissions in the first place. However, it is worth noting that unlike with carbon taxes, for which there is public opposition, there is sizeable support from Gen Z for the ethics tax on fast fashion brands.

While the results did not support hypotheses H1-B, and H3-B, and H4-B about the effect of the data, political, and social media elite cue interventions on policy support, respectively, there was partial support for hypothesis H2-A because the intervention combining data and the political elite cue significantly outperformed the individual political elite cue intervention. Once again, this indicates that politicians would benefit from citing credible evidence supporting their policy endorsements when directing communications to the public.

The results offer mixed support for hypotheses H1-C, H2, H3-C, and H4-C about the effect of the interventions on behaviors. Compared to control, none of the treatments increased willingness to pay more for sustainable alternatives to fast fashion, which was instead predicted by sociodemographic factors including gender, education, and political liberalness, as well as past consumption of sustainable fashion and knowledge of concerns associated with fast fashion. This is consistent with prior work examining which sociodemographic characteristics predict pro-environmental behavior more generally (Dietz et al., 1998; Vicente-Molina et al., 2018; Watkins et al., 2016). The unresponsiveness of the willingness to pay item to any interventions despite significantly worsened perceptions of fast fashion underscores the concern that without regulatory intervention to level prices, consumers may not be sufficiently incentivized to opt for sustainable fashion. The observation that income and clothing budget did not significantly

predict willingness to pay is notable and also points to the general aversion among consumers to paying high prices for clothes, which is unsurprising given that fast fashion has solidified the expectation of increasingly low prices.

However, while similar factors also predicted future intentions to consume fast and sustainable fashion, treatments combining data and elite cues did significantly change intentions as hypothesized. Specifically, the political + data treatment was the only one to significantly lower intentions to consume fast fashion whereas the social media + data treatment was the only one to significantly increase intentions to consume sustainable fashion. It is noteworthy that adding the political elite cue effectively serves as a sanction against consumption (from fast fashion brands) whereas the social media cue encourages consumption (albeit of sustainable fashion). This finding makes intuitive sense since the government can be thought of as a body that controls the permissibility of certain actions whereas social media influencers are primarily associated with promoting some type of consumption. Even if greenfluencers successfully increase the consumption of sustainable fashion, the problem of fashion overconsumption among Gen Z remains a concern. The consumption of sustainable fashion is only a positive outcome when it substitutes fast fashion, but not if it merely adds to fashion consumption generally. Intention to purchase from fast (sustainable) fashion brands was also predicted by past consumption of fast (sustainable) fashion and propensity to follow fashion trends (value personal style). Taken together, these findings allude to the stickiness of fashion consumption behaviors. While those accustomed to the low prices of fast fashion intend to continue consuming it, environmentally and ethically conscious others intend to continue shopping sustainably.

Another interesting observation is that the political + data treatment only lowered future intentions to purchase from Shein and Temu (Chinese ultrafast fashion brands), but not from

brands like Forever 21 and H&M (which are multinational American and Swedish fast fashion brands respectively). This is concerning because of the US government's exclusive focus (thus far) on probing Shein's ties to forced labor despite many other leading fast fashion brands (including Forever 21 and H&M) also being known to employ unethical labor practices. Elite discourse about fast fashion should therefore address the industry more multilaterally. Concurrently, there is also a need for an informational tool (ideally one that is verified and endorsed by a reputable regulatory body like the EU's proposed digital product passports) to help consumers to easily distinguish between fast and sustainable fashion brands and products.

In summary, this study demonstrates the value of citing specific data evidencing criticisms of fast fashion. To bolster their influence on public opinion, political and social media elites should consider sharing credible sources that validate their claims. While evidence-based interventions are effective at changing beliefs, changing behaviors require the supply of a normative signal delivered via elite cues. Although Gen Z members display high levels of awareness regarding the criticisms of fast fashion and are generally in favor of policy measures to regulate it, providing specific evidence with regard to said criticisms further worsens perceptions of fast fashion. Insofar as beliefs predict policy support and behaviors in the context of fashion, evidence- and norm-based interventions should help mitigate the fast fashion problem. Leveraging the influence of social media elites to promote sustainable fashion should be approached with caution due to the potential for increasing the overconsumption of fashion in general. In spite of the prosocial values held by Gen Z, they are unwilling to pay the currently requisite premiums for sustainable alternatives to fast fashion. Consequently, there is a need for regulation in the industry such that the material costs of consuming fashion sustainably are

alleviated. Potentially effective measures include introducing taxes and subsidies or other nudges to the choice environment.

The generalizability of the current work is somewhat limited by its lack of variation in elite cues deployed, though there is already a substantial literature on source effects that can speak to the implications of varying sources. The political elite cue was accompanied by a headline from CNN, an outlet perceived as left leaning. However, the study design ensured that participants encoded the fact that the excerpt itself mentioned that the congressional activity against fast fashion was bipartisan. The social media elite figure whose Instagram post was featured as part of the relevant treatments is not exceptionally well-known, but her substantial follower count (~290,000) and status as social media influencer were made known to participants. Further, prior work suggests that lower follower counts actually increase the influence of greenfluencers on sustainable intentions. Nonetheless, the effectiveness of data sources, political and social media elite cues is likely to vary depending on how they are perceived in terms of respect, trustworthiness, admiration, and other factors. Additionally, while the current design stripped the data stimulus of value-laden language, future research could explore potential benefits from pairing data with normative language. Furthermore, this work emphasizes the tradeoff between material costs like price and prosocial values like ethics and environmentalism. This dynamic warrants further investigation to strengthen support for regulatory action aimed at balancing incentives between fast and sustainable fashion. Given the finding that providing evidence is effective at strengthening choice-relevant beliefs, future research should also investigate the effect of providing decision-relevant data and normative signals at the time of the decision, i.e., at the time of purchasing clothes, potentially via the medium of garment labels or on online shopping venues.

Chapter 3:

Stated and Revealed Preferences

Study 2 Background

This chapter investigates the relative influence of cost considerations versus prosocial value considerations on consumer decision-making in the context of fashion purchases. Despite Gen Z members' progressive stance on social issues and their inclination towards activism in areas such as climate change, they continue to drive demand for fast fashion, an industry known for exploiting its workers and having detrimental consequences for the environment. Findings from Chapter 2 demonstrate that while Gen Z's beliefs regarding fast fashion are very responsive to norm and evidence-based interventions, this does not affect their willingness to pay more for sustainable fashion. Consequently, the current work delves further into the trade-offs Gen Z consumers are willing to make between prosocial values and cost, as well as their level of self-awareness as to how they resolve these tradeoffs as consumers.

Reputational Concerns and Social Desirability

Prior research has identified multiple motivations for prosocial consumer behavior, including extrinsic rewards and reputational benefits. Consumers not only seek validation as “good” individuals from others but also from themselves (Small & Cryder, 2016). Prosocial behavior has also been shown to activate pleasure centers in the brain (Harbaugh et al., 2007; Moll et al., 2006). In the realm of fashion, sustainable consumption may be driven, in part, by concerns about reputation, particularly for Gen Z. Regarded as the first “digital natives,” Gen Z members are particularly concerned about carefully curating their online public persona and are likely to be relatively informed about the digital discourse and critiques surrounding the consumption of fast fashion (as evidenced in Chapter 2; also see Katz et al., 2021). As a result, they may experience social pressure to align their public behaviors with values they perceive to be socially desirable, such as caring about the environment and taking a stance against the

exploitation of garment workers. Certainly, their private and public attitudes and behaviors may not align for a variety of reasons, including that for Gen Z, affordability is likely a primary consideration when buying clothes.

Furthermore, social desirability bias in survey responses is a well-known phenomenon, as respondents may provide answers that are inconsistent with their actual views (Larson, 2019). This may arise from two types of motivations: either to deceive others (such as the researcher) or to deceive oneself (Nederhof, 1985). Again, participants may wish to signal their “goodness” to both the researcher and themselves. Although online, anonymous surveying reduces social desirability concerns, directly asking participants about their preferences—such as how much they prioritize price versus prosocial values when buying clothes—could still lead to biased responses.

Attitude-Behavior Gaps and Implicit Attitudes

In addition to possible discrepancies between private and public presentations, consumers’ behaviors frequently diverge from their own attitudes. This phenomenon, known as attitude-behavior gaps, has been widely studied by behavioral scientists, particularly in the climate and environment domains (McBroom & Reed, 1992; Nguyen et al., 2019; Sheeran & Webb, 2016). Studies have demonstrated that individuals frequently engage in low-cost actions to bridge the disparity between their aspirational environmental views and their actual environmental impact, yet they tend to avoid higher-cost sustainable behaviors (Farjam et al., 2019).

Gen Z’s relationship with fashion can be viewed as an example of an attitude-behavior gap, given its members’ stated concern about social justice and the environment but continued patronage of fast fashion brands that violate these values. There are likely numerous explanations

for such a gap, should it exist. It could be the case that while Gen Z members are aware of the criticisms of fast fashion and concerned by its growth, they do not feel personally accountable for addressing the issue. They may instead limit their activism to vocalizing their moral opposition to the crisis but ultimately expect other actors, e.g., government, to shoulder the responsibility of regulating the industry through policy measures.

Alternatively, Gen Z consumers may themselves be unaware of the extent of the disparity between their attitudes and behaviors in the context of fashion. This would be especially true if their consumption of fast fashion is a function of their implicit or subconscious attitudes more than their explicit attitudes (Rudman, 2004; but see Gawronski, 2019 and Gawronski et al., 2006). For example, consumers may believe or state that they prefer sustainable products but may not accurately gauge the extent to which other attributes outweigh sustainability when purchasing clothes. Psychologists have identified numerous domains where individuals exhibit a lack of introspection regarding their own preferences. For example, implicit race bias has been observed even in individuals who claim to be unprejudiced (Devine et al., 2002; Greenwald & Banaji, 1995). Consumer research has also considered the potentially nonconscious nature of information processing, attitude formation, and consumption behaviors (Dimofte, 2010). However, this idea has not been extensively or specifically explored in the context of fashion consumption. Whether fashion consumers, particularly the socially aware Gen Z consumers, are also self-aware remains an open question.

Preference Reversals

Over many decades, researchers in psychology have devised alternative methods for measuring preferences, driven by various reasons including the necessity to circumvent social desirability bias and to capture implicit attitudes effectively. Consequently, they have observed

that employing different methods to elicit preferences can lead to preference reversals, wherein individuals express divergent preferences for the same choice set across different response modes (Johnson et al., 1988; Schkade & Johnson, 1989; Slovic & Lichtenstein, 1983). For instance, preference reversals have been observed when individuals evaluate options separately versus together. Researchers hypothesize that this reversal occurs because attributes that are challenging to evaluate in isolation exert a stronger influence during joint evaluation compared to separate evaluation (Hsee et al., 1999).

The current work employs two methods to elicit preferences: a stated preference task and a conjoint experiment. In the stated preference task, participants rank the importance of price and two prosocial attributes (environmental and ethical considerations) when they purchase clothes. In the conjoint experiment, participants engage in a series of forced-choice tasks between pairs of options that differ in value on those attributes, and the choices made can be used to infer the relative values of attribute importance. The former constitutes an explicit measure of conscious preferences, while the latter represents a cognitively more effortful task designed to surface implicit preferences.

When most consumers evaluate various clothing options, they presumably rely on readily available information about basic clothing-related attributes such as price, color, cut, material, etc. In contrast, details regarding clothing brands' environmental impact and ethical practices often necessitate additional research and may be difficult to process once obtained. This difficulty may contribute to inconsistencies between consumers' stated and revealed preferences as has been observed in other domains, an example being the adoption of fuel-efficient vehicles. Research in this domain has shown that consumers often depend on decision signposts (i.e., nudges that help align choices to the decision-maker's objectives) to guide their choices,

particularly in purchase situations involving significant upfront costs (Ungemach et al., 2018). In such cases, consumers may struggle to identify the most fuel-efficient option (despite having pro-environmental beliefs) or fail to recognize the potential economic benefits associated with choosing it (despite preferring to save money than not). This example draws parallels to the choice between fast and sustainable fashion, not just due to the stark difference in upfront costs but also because consumers may overlook the long-term value of sustainable fashion. While fast fashion items may seem cheaper initially, they deteriorate quickly, leading to a higher cost per wear than consumers may perceive.

Goals of the Current Work

This study exclusively focuses on the following three attributes: environmental impact (environment rating in the conjoint experiment), brand ethics (ethics rating in the conjoint experiment), and price. These attributes were chosen because they are essentially what distinguish fast from sustainable fashion. Two distinct preference elicitation methods are employed to determine the importance of the three attributes under examination and to investigate whether Gen Z members, as fashion consumers, exhibit consistent stated and revealed preferences for said attributes. This work is guided by the following hypotheses:

- Price will emerge as the most important revealed attribute (H1).
- Stated and revealed preferences will differ. Specifically, the order of importance of the attributes will differ under each preference elicitation method, and either ethics or environment rating will be stated as more important than price (H2).

The contributions of this work are two-fold. First, if price indeed emerges as the most influential attribute in clothing purchase decisions, it will bolster the argument for governmental intervention to rectify pricing disparities between fast and sustainable fashion, as previously

expounded upon in Chapter 2. Second, should the data support that consumers prioritize ethical considerations as equal to or more important than environmental concerns, it would signal a potential transition away from environment-centric interventions towards emphasizing ethical concerns as a strategy to curb fast fashion. For example, initiatives such as the EU's digital product passports, presently aimed at informing consumers about the environmental footprint of clothing items, could gain from integrating data on brand ethics.

Study 2 Method

Open Science Practices

This study was preregistered at: https://aspredicted.org/6R2_9FS. The data and code are available at: <https://github.com/rohinimajumdar/dissertation>.

Conjoint Design

The revealed preferences task was programmed using Qualtrics' Conjoint Analysis Tool. The three attributes were price, environment rating, and ethics rating. Each attribute had three levels as listed in Table 2. There were four tasks within the conjoint exercise wherein participants had to indicate their preferred choice option from among three alternatives with randomly selected levels for each attribute. For example, a plausible choice set might have included Option A (\$75, average environment rating, and low ethics rating), Option B (\$125, low environment rating, and average ethics rating), and Option C (\$25, low environment rating, and low average rating). The main binary dependent variable in the conjoint task was whether each of the three alternatives shown to a participant was chosen or not.

The number of tasks and alternatives within each task was the result of a tradeoff between obtaining rich data and overwhelming participants with a too lengthy or complex choice task (Hainmueller et al., 2014; Meissner et al., 2016). Each attribute had the same number of levels to

avoid the “number of levels effect” where attributes specified with more levels gain more importance (Verlegh et al., 2002).

Table 2

Conjoint Attributes and Levels

Levels	Attributes		
	Price	Environment Rating	Ethics Rating
Low	\$25	★	✓
Mid	\$75	★★	✓✓
High	\$125	★★★	✓✓✓

Note: Labels shown in the Levels column were not included in the actual conjoint task.

A fractional factorial, forced-choice design was adopted to optimize the number of data points across potential packages. For complete details on Qualtrics’ algorithm, see their conjoint analysis white paper (Qualtrics, n.d.). A prespecified exclusion criterion restricted the highly implausible package combining the highest environmental rating, the highest ethics rating, and the lowest price from being displayed to participants during the conjoint task.

Qualtrics’ conjoint tool provides downloadable individual-level utility coefficients, also known as part-worth utilities, which represent the utility of each level of each attribute as experienced by individual participants and reflected in their choices. Qualtrics uses a Hierarchical Bayes estimation to calculate the part-worth utilities which are ordinal, zero-centered, and typically range from -5 to +5. Part-worth utilities are used to derive the relative overall importance of each attribute, indicating how much influence each of the three attributes has on consumer choice, and average utilities of each level on a given attribute, which capture how the inclusion of a given level of the attribute influences the favorability of the product.

Participants

The required sample size calculation was guided by the following (market research) industry recommended formula: $N = \frac{mc}{ta} \cong 190$ (per segment), where c is the largest number of levels across all attributes, t is the number of tasks, a is the number of alternatives per task, and m is a multiplier chosen based on the scale of the project such that $m = 750$ if the total number of levels across attributes is less than or equal to 10, and $m = 1000$ if the number exceeds 10 (Qualtrics, n.d.). In this case, $c = 3$, $t = 4$, $a = 3$, and $m = 750$ given the small number of total levels across attributes. Given that the study design included two conditions, i.e., a counterbalancing of which preference elicitation method came first (stated or conjoint), the required sample size was estimated at 190 per condition for a total target sample size of 380. Note that the conjoint was designed for formal comparisons between the two conditions but not to investigate the effects of any other individual difference and/or demographic variables. Any reported results segmenting the sample along these dimensions should be interpreted with this caveat.

Four hundred and three Gen Z adults born after 1996 and residing in the United States were recruited via Prolific. 19 participants failed at least one attention check and were excluded from analyses. The final sample included 384 participants (with 192 in each condition) of whom 47% were female, 46% were male, and 7% were non-binary, with an overall mean age of 23 years. All participants in the final sample passed the predefined exclusion criterion for not speeding.

Procedure

Participants were randomly assigned to one of two counterbalanced conditions, i.e., the stated first or the conjoint first condition, which determined the order in which they performed

the stated and revealed preference tasks. In both conditions, they first received some background information including an explanation of all attributes and their possible ranges in the conjoint task. This was to ensure that participants in the conjoint first condition did not have an informational advantage compared to those in the stated first condition. See Appendix B for complete information on the survey instrument including the background information.

The stated preference task asked participants to rank (from 1 to 3) the relative importance of price, environmental impact, and ethics as factors influencing their clothing purchase decisions. The conjoint (revealed preference) task asked participants to make choices between products varying in the same attributes. After completing both the stated and revealed preferences tasks, participants answered questions assessing demographic characteristics and individual differences, including a question about the maximum amount they would pay for a new pair of jeans. This question enhances the interpretability of the conjoint results given the use of a forced-choice paradigm where the price points ranged from \$25-125.

Study 2 Results

Stated Preferences

Price was ranked the highest in the stated preferences task on average, followed by ethics rating and environment rating, as shown in Table 3. This inference from the mean rank scores was supported by pairwise rank comparisons (how often was the item in row x preferred to the item in column y) and marginal rank frequencies (how often was the item in row x ranked at the position in column y). Price was most often prioritized over environment rating and ethics rating, while ethics rating was prioritized over environment rating more often than vice versa. The modal ranks for price, ethics rating, and environment rating were 1, 2, and 3 respectively.

Table 3*Stated Preferences*

	Descriptive Statistics		
	Environment Rating	Ethics Rating	Price
Mean Rank	2.53	2.11	1.36
Rank SD	0.65	0.63	0.71
	Pairwise Rank Comparisons		
	Environment Rating	Ethics Rating	Price
Environment Rating	0	121	60
Ethics Rating	263	0	80
Price	324	304	0
	Marginal Rank Frequencies		
	Rank 1	Rank 2	Rank 3
Environment Rating	32	117	235
Ethics Rating	57	229	98
Price	295	38	51

Note: Lower means indicate higher ranks. Ranking data were analyzed using the pmr R package (v1.2.5.1; Finch, 2022; Lee & Yu, 2013).

Revealed Preferences

Price was approximately twice as important as environment rating and ethics rating as indicated by the relative attribute importance scores, as shown in Table 4, which were derived from part-worth utilities. The prioritization of price over the other attributes was also reflected by the pairwise rank comparisons and marginal rank frequencies. Based on these descriptive statistics, modal ranks in the revealed preference task were consistent with those in the stated preference task. However, stated and revealed preferences are formally compared later in this section.

Table 4*Revealed Preferences*

Conjoint Analysis and Descriptive Statistics			
	Environment Rating	Ethics Rating	Price
Relative Importance	23.2	27.3	49.5
Mean Rank	2.63	2.01	1.36
Rank SD	0.58	0.60	0.71
Pairwise Rank Comparisons			
	Environment Rating	Ethics Rating	Price
Environment Rating	0	82	59
Ethics Rating	302	0	80
Price	325	304	0
Marginal Rank Frequencies			
Rank	1	2	3
Environment Rating	20	101	263
Ethics Rating	68	246	70
Price	296	37	51

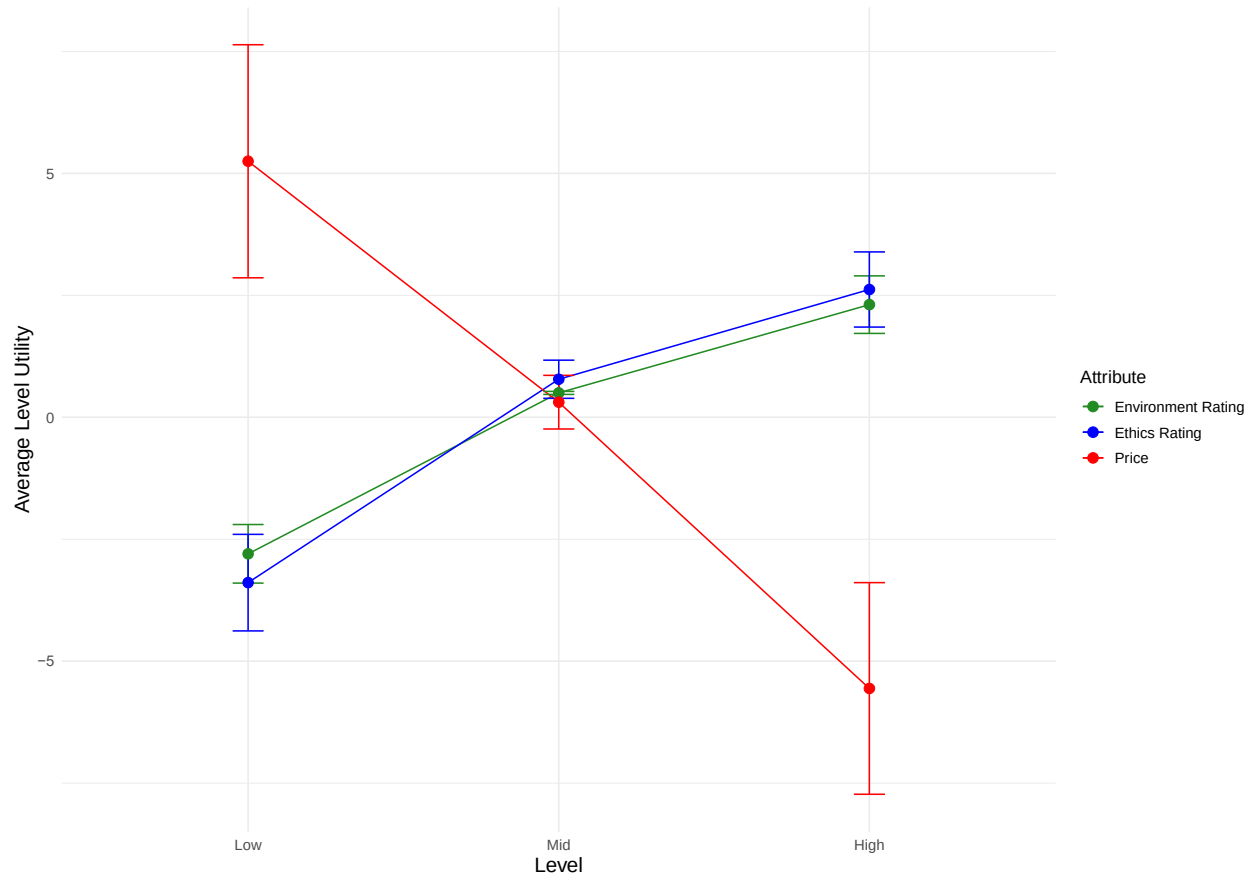
Note: Lower means indicate higher ranks. Ranking data were analyzed using the pmr R package.

Average Level Utilities

Figure 9 displays average utilities for each level of each attribute. These scores, also derived from part-worth utilities, indicate how the inclusion of a given level changes the favorability of the alternative as a whole. The high and low levels of price had larger absolute value levels of utility magnitude compared to the corresponding levels of environment rating and ethics rating. The mid-levels for each attribute had similar average utilities. Based on the utilities, participants preferred lower prices, higher environment ratings, and higher ethics ratings.

Figure 9

Average Level Utilities Across Attributes

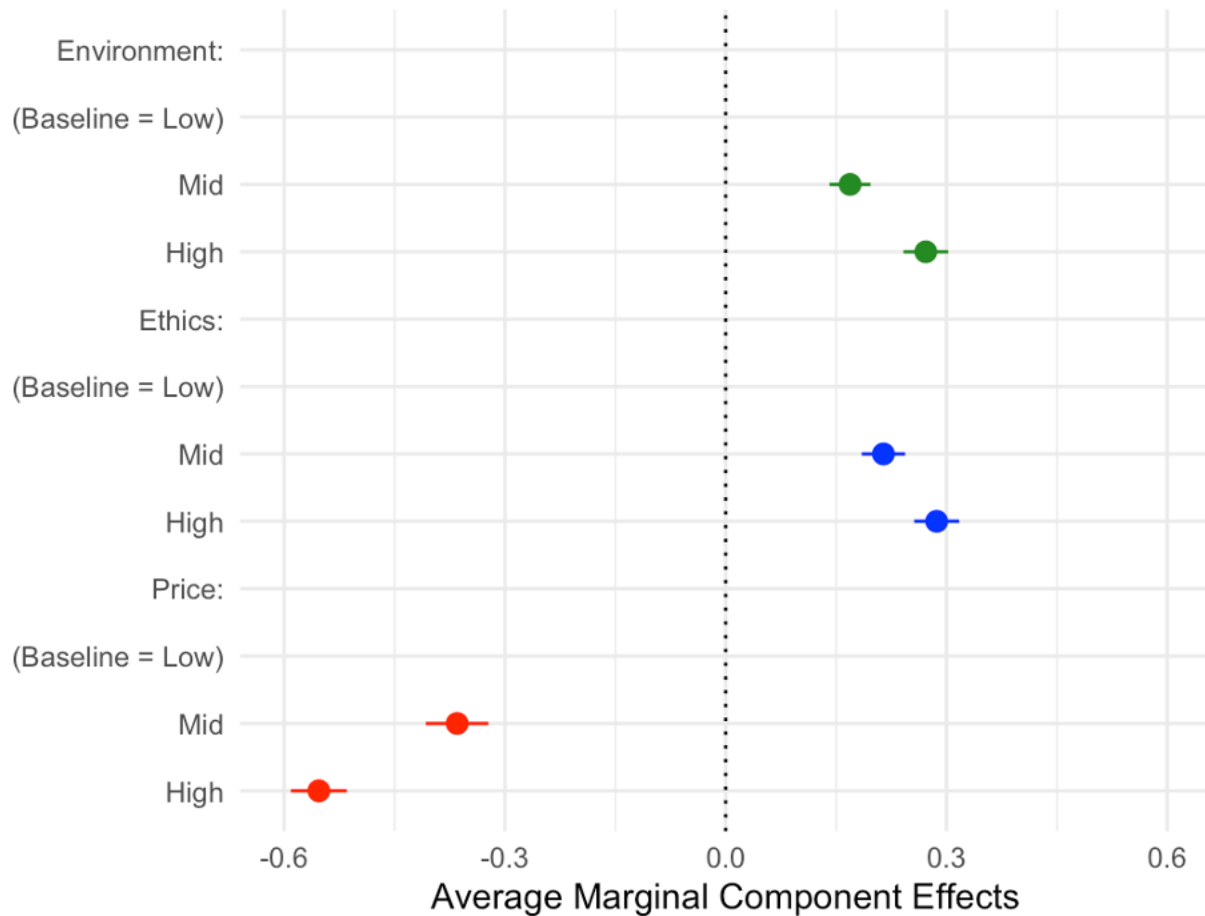


Average Marginal Component Effects

The amce function in the cjoint package in R (v2.1.1; Barari et al., 2023) estimated average marginal component effects (AMCEs) based on a generalized linear regression model predicting a binary choice variable using attribute-levels. The makeDesign function in the same package was used to specify the restricted profile that was never displayed to participants (i.e., high environment rating, high ethics rating, low price). Figure 10 visualizes the results of the model, which treats the low levels of each attribute as baselines.

Figure 10

Average Marginal Component Effects Compared to Low Levels of All Attributes



The AMCE magnitudes of the mid and high levels of price were larger than those of the other attributes, suggesting that the mid and high price levels decreased the favorability of the overall package more than the mid and high levels of environment rating and ethics rating increased its favorability. This is consistent with the finding that on average, participants reported a maximum budget for a new pair of jeans between \$50 and \$75 ($M = 2.91$, $SD = 1.27$; measured on a 6-point ordinal scale with \$25 increments where “2” = \$50 and “3” = \$75).

Comparing Stated and Revealed Preferences

Two chi-square tests determined that both the stated preferences and revealed preferences were not uniformly distributed, i.e., the rank orders were not random ($\chi^2(4) = 507.16, p < .001$; $\chi^2(4) = 519.48, p < .001$). A third chi-square test comparing the frequency distributions of rank orders obtained from the stated and revealed preferences suggested that they were significantly different ($\chi^2(5) = 11.93, p < .05$).

However, upon closer inspection, the frequency distributions are generally aligned and price > ethics rating > environment rating was the modal distribution in both stated and revealed preferences, occurring 206 and 234 times respectively out of 384 observations (Table 5). Further, permutations where environment was prioritized over ethics (environment > ethics) appear to be less frequent in revealed preferences compared to stated preferences. Parallely, permutations where ethics was prioritized over environment (environment > ethics) were more frequent in revealed preferences compared to stated preferences.

Table 5

Comparing Rank Order Distributions from the Stated and Revealed Preferences Tasks

	Frequency	
	Stated Preferences	Revealed Preferences
price > ethics > environment	206	234
price > environment > ethics	89	62
ethics > price > environment	29	29
ethics > environment > price	28	39
environment > ethics > price	23	12
environment > price > ethics	9	8

Note: Ranking data were analyzed using the pmr R package.

The mean ranks, pairwise rank comparisons, and marginal rank frequencies in Tables 3 and 4 and the frequency distributions in Table 5, taken together, suggest that while price emerged

as the dominant attribute in both tasks, ethics rating appeared relatively more important than environment rating in the conjoint compared to the stated preferences task.

Task Order Effects

Two chi-square tests comparing the frequency distributions of rank orders in the stated first and conjoint first conditions (Table 6) determined that the order of the tasks affected neither stated preferences ($\chi^2(5) = 6.49, p = .26$) nor revealed preferences ($\chi^2(5) = 8.11, p = .15$).

Table 6

Comparing Rank Order Distributions from the Stated and Revealed Preferences Tasks

	Frequency			
	Stated Preferences		Revealed Preferences	
	Stated First	Conjoint First	Stated First	Conjoint First
environment > ethics > price	10	13	6	6
ethics > environment > price	10	18	20	19
environment > price > ethics	3*	6	6	2*
ethics > price > environment	12	17	12	17
price > environment > ethics	44	45	23	39
price > ethics > environment	113	93	125	109

Note: Chi-square approximations should be interpreted with caution due to low cell counts. Ranking data were analyzed using the pmr R package.

Preference Reversals

89 participants ranked either environment rating or ethics rating as the most important attribute in the stated preferences task (Table 7). For this subset, a chi-square comparing the frequency distributions of rank orders obtained from their stated and revealed preferences indicated a significant difference ($\chi^2(5) = 92.61, p < .001$). For 60 of those 89 participants (67%), price emerged as the most important revealed attribute. This preference reversal is especially notable for those who ranked environment rating the highest, with 22% displaying consistency

across their stated and revealed preferences compared to 39% among those who ranked ethics rating highest. The modal rank order of revealed preferences in this group (price > ethics rating > environment rating) was consistent with the sample mode.

Table 7

Preferences of Participants Who did Not Rank Price Highest in the Stated Preference Task

	Frequency	
	Stated Preferences	Revealed Preferences
ethics > price > environment	29	8
ethics > environment > price	28	14
environment > ethics > price	23	5
environment > price > ethics	9	2
price > ethics > environment	0	49
price > environment > ethics	0	11

Note: Ranking data were analyzed using the pmr R package.

Analyzing demographic and individual differences between those who did ($N = 295$) and did not ($N = 89$) rank price as the most important attribute in the stated preferences task indicated that participants in the latter group tended to be more politically liberal ($t(159) = 3.27, p < .01$), be more likely to affiliate themselves with the Democratic party ($\chi^2(2) = 7.80, p < .05$), to report a higher maximum budget for jeans ($t(121) = 4.56, p < .001$), to report a lower likelihood of having consumed from major fast fashion brands in the past ($t(119) = -2.63, p < .01$), and to report higher awareness of both environmental ($t(174) = 5.56, p < .001$) and ethical concerns ($t(162) = 4.48, p < .001$) associated with fast fashion.

Study 2 Discussion

This chapter explored the association between stated and revealed preferences concerning prosocial values, specifically environmental and ethical considerations, alongside price in the context of fashion consumption. Participants ranked these attributes based on personal

importance in a stated preferences task. Additionally, to elicit the preferences actually guiding their choices, they participated in a conjoint experiment in which they made tradeoffs between these attributes across a series of choices.

Both tasks revolved around a hypothetical purchase decision concerning a new pair of jeans, a product with wide variability in price, environmental impact, and ethical standards of production in the real world. The conjoint experiment tested preferences across low, mid, and high environment and ethics ratings and three price points, \$25, \$75, and \$125. In reality, sustainable jeans often retail at even higher prices whereas some fast fashion brands offer pairs for under \$25. The significant price disparities between sustainable and fast fashion motivated the hypotheses that in a Gen Z sample, price would emerge as the most important revealed attribute (H1) and that stated and revealed preferences would differ (H2), in part due to social desirability considerations.

The conjoint data offered strong support for H1 as the relative importance of price was approximately double that of either environment rating or ethics rating. Per ranked comparisons derived from individual part-worth utilities, price overwhelmingly trumped each of the other attributes in the revealed preferences task. Analyses of the conjoint data, including average level utilities and AMCEs, taken together, indicated that participants preferred alternatives with the low price point and high environment and ethics ratings. Unsurprisingly, these preferences comprised the only profile that was restricted from the conjoint experiment for its implausibility in the real world.

However, contrary to expectations, participants appeared to be conscious of and willing to articulate their preferences, as stated preferences were generally aligned with revealed preferences. Although a chi-square test detected a statistically significant difference between the

distributions of rank orders from the two tasks, the difference was primarily driven by price (and ethics rating) being more strongly prioritized in the conjoint than they were in the stated preferences task. Importantly, data from both tasks converge on the same order of importance across these attributes, i.e., Gen Z fashion consumers care most about affordability, followed by ethical production practices, and third, minimizing environmental impact. Therefore, the data did not evidence the hypothesized sample-wide preference reversal (H2). Given that the within-subjects design of this study required each participant to complete both the stated and revealed preference tasks, it is possible that they may have been striving for consistency across tasks. However, this possibility is mitigated by the use of a conjoint design for the latter task wherein participants were compelled to make difficult tradeoffs between the attributes.

While the large majority of Gen Z consumers in the sample appeared to knowingly prioritize cost over prosocial considerations, a small subset of participants ranked either environmental impact or brand ethics as most important to their clothing purchase decisions in the stated preference task. Unlike the broader sample, this subset demonstrated a preference reversal between the stated and revealed preferences with price emerging as the most important revealed attribute despite it not being ranked first. Note that task order (i.e., stated first or conjoint first) did not affect results, suggesting that these participants in the sample were either unaware of their choice-guiding preferences even after engaging in the conjoint experiment or felt compelled to misrepresent them. Consistent with the latter explanation, these participants tended to be more politically liberal, affiliated with the Democratic party, willing to spend more on jeans, less likely to report past consumption of fast fashion, and more aware of the ethical and environmental concerns associated with it. While the present study cannot formally attribute this

observation to social desirability concerns, it is plausible that such factors may have affected this particular subset of respondents.

These findings guide a pessimistic view of policy approaches to the fast fashion crisis that do not directly address the stark price differential between sustainable and fast fashion. Not only is Gen Z's demand for fashion consciously extremely price-elastic, but also a minority of consumers who state and/or believe that they hold prosocial preferences actually base their choices on price as well. The reality that sustainable fashion (including denim) can retail at much higher prices than those tested in this study makes these results especially concerning.

The finding that fashion consumers value higher ethical standards at least as much as (if not more than) environmental impact, however, should be viewed as encouraging. Interventions that currently rely on drawing attention to the negative environmental consequences of fast fashion to discourage its consumption could also benefit from highlighting the unethical labor practices it upholds. The importance placed on ethical considerations, potentially surpassing environmental concerns, could stem from differences in psychological and temporal distances perceived by consumers. While the effects of climate change may seem distant and abstract, problems such as the exploitation of garment workers (including child labor) may appear more immediate and tangible in comparison, thus exerting more influence on consumer behavior (Weber, 2015).

Proponents and designers of digital product passports for garments should consider including metrics that will help consumers evaluate products along ethical considerations in addition to environmental impact. Admittedly, this is easier said than done given that establishing norms for standardized reporting on ethical practices in the fashion industry would be a complex and challenging endeavor, in part because it would necessitate a substantial upfront investment

from the government or a quasi-governmental organization, as well as transparency and cooperation from fashion brands.

Beyond their applied value in addressing the fast fashion crisis, these findings also have interesting implications for understanding and nudging consumer and other decisions. As previously discussed, when consumers make choices with negative externalities despite their prosocial attitudes, it may not necessarily indicate an attitude-behavior gap or irrational behavior (e.g., buying fast fashion or fast food to save money despite holding pro-environmental or health-conscious attitudes, respectively). Instead, they might be acting rationally by aligning their choices with more prioritized attributes such as cost and convenience. In such cases, interventions aimed at nudging consumers towards prosocial choices may benefit more from focusing on altering the choice environment rather than on enhancing decision information and assistance, especially when consumers are already highly aware of their own preferences and the tradeoffs they are willing to make (Mertens et al., 2022).

However, when attitude-behavior gaps stem from a lack of self-control (e.g., overconsuming fast fashion despite already having a surplus of clothes or eating fast food despite already having groceries for home-cooked meals), interventions that reinforce self-regulation can help close this gap (Mertens et al., 2022; Nielsen, 2017; Sheeran & Webb, 2016; Wyss et al., 2022). While it is notable that Gen Z fashion consumers in this study displayed consistent stated (explicit) and revealed (implicit) preferences, very often, a lack of self-control can lead people to act irrationally and in ways that are inconsistent with their attitudes (even specific ones that directly correspond to the behavior). Exercising self-control is challenging, especially when consumers are subject to myriad pressures from social media, advertising campaigns, their peers, etc. This is particularly true for younger fashion consumers. Research on improving self-control

and deploying strategies to overcome temptations to align behaviors with long-term goals would significantly aid efforts addressing the fast fashion crisis (Duckworth et al., 2016; Hofmann et al., 2012; Milyavskaya & Inzlicht, 2017; Wyss et al., 2022).

Insights from the current work are naturally limited by its exclusive focus on Gen Z consumers. However, considering their greater inclination towards conscientious consumption compared to previous generations and their significant representation within the fast fashion market, Gen Z consumers are a demographic warranting particular attention from interventionists and policymakers. Given that their demand is consciously and consistently price-elastic despite their prosocial beliefs (as measured in Chapter 2), future research on a broader sample should evaluate the feasibility and effectiveness of policies aimed at leveling price disparities between sustainable and fast fashion. Additionally, the alignment between consumers' stated and revealed prioritization of price raises theoretical and empirical questions about whether Gen Z's consumption of fast fashion should be viewed as indicative of attitude-behavior gaps or as economically rational behavior. Considering the findings from Chapters 2 and 3 together suggests a need for further investigation into the optimal content to include in digital product passports or garment labels, as well as the most impactful methods for presenting this information (Chapter 4).

Chapter 4:

Effective Labels

Study 3 Background

As fast fashion continues to dominate markets globally, it has garnered increased scrutiny from policymakers in numerous countries, including the US and members of the EU. The political discourse around regulating fast fashion is still in a relatively nascent stage in the US, with members of Congress singling out Chinese ultrafast fashion brand Shein as it prepares for its initial public offering on the US stock market (McLymore & McLymore, 2023; Meyersohn, 2023). Meanwhile, the EU has made substantial legislative progress in addressing the fast fashion crisis by mandating that fashion brands provide full supply chain transparency by 2030.

Stakeholders across the EU's academic, public, and private sectors are currently collaborating to develop and test an initiative known as digital product passports for textiles (Trace4Value, 2023). This initiative aims to furnish consumers, brands, and authorities with comprehensive information about each clothing item. According to the EU, one of the primary goals of the digital product passports is to “help consumers to make sustainable choices” (Trace4Value, 2023). Although it is understood that these garment labels will contain information about the environmental impact of items (among other attributes), the specific metrics to be included and how they will be measured and reported are yet to be confirmed. Therefore, the focus of this chapter is to examine different methods of presenting environmental attributes on garment labels and how these presentations influence sustainable fashion consumption.

Informed Consumer Choice

The assumption underlying the digital product passports initiative is that enhanced garment labels can help increase sustainable consumption by creating informed consumers. However, informed consumers do not necessarily make better choices. Consider the 1994 Nutritional Labeling and Education Act (NLEA) in the US. The provisioning of nutritional

information on food labels was intended to help consumers make healthier food choices, but unsurprisingly, consumers often have conflicting goals that lead them to make unhealthy choices (Silverglade, 1996; Variyam, 2008). While individuals generally desire positive health outcomes for themselves, they also have more immediate competing preferences for tastier, more convenient, and more affordable food. Possessing knowledge about nutrition is often insufficient to override these preferences (Guthrie et al., 2015; Yang et al., 2012).

Goals of the Current Work

There are major parallels between food and fashion consumption. For instance, despite their prosocial values, the behavior of Gen Z as fashion consumers reflects competing goals, including a proclivity to keep up with microtrends, a desire for variety, and a preference for low prices (as evidenced in Chapters 2 and 3). The mixed success of other informed choice initiatives such as the NLEA raises the question of whether provisioning information about environmental impact on garment labels will indeed lead to more sustainable choices by fashion consumers.

While this is an important question, it is not the focus of this work for two reasons. Firstly, initiatives such as the EU's digital product passports provide consumers with access to reliable information—a critical need that is currently unmet. Even motivated consumers with prosocial values who aspire to make sustainable choices lack the requisite information in the current landscape. Secondly, whether such labeling will indeed lead to more sustainable choices is an empirical question that should become answerable once the EU regulations are implemented. Further, determining what information to include is not an objective of the present study described in this chapter. However, based on insights presented in Chapter 3, authorities should consider incorporating information about brands' ethical practices alongside details about environmental impact, especially considering that consumers prioritize the former as much as, if

not more than, the latter. Instead, the primary research objective of this study is to identify the optimal method for presenting information about environmental impact on garment labels, under the assumption that garment labels have been chosen as a medium for conveying such information to consumers.

Designing Effective Labels

A good information label should be informative without being difficult for consumers to understand and utilize. Indeed, there are many ways to present information on labels. For example, certain data points on nutrition labels are provided as raw values (e.g., protein content in grams), while others are expressed as percentages of the daily recommended intake (e.g., iron). Additionally, these labels typically include a message citing the “general nutritional advice” recommending a daily intake of 2,000 calories. Presumably, label architects assume that consumers can understand macronutrients quantified in grams, but they may need percentage of daily value figures to interpret quantities of micronutrients accurately. Additionally, consumers might struggle to contextualize calorie density without the recommended calorie intake. In general, these design choices are aimed at making the label user-friendly while still being sufficiently and accurately informative for consumers.

Similarly, garment labels must strike a balance between providing transparency, ensuring accuracy, and offering practical guidance for consumers. Presenting information about environmental impact on garment labels poses unique challenges, as the average consumer may be unfamiliar with considering and interpreting these data (e.g., CO₂ emissions in kilograms, water usage in liters). As with calories and micronutrients, consumers may struggle to contextualize the environmental impact of a given product without being able to compare it to different products along these attributes. Research on separate versus joint evaluation of options

has shown that difficult-to-evaluate attributes (such as unfamiliar environmental metrics) are more impactful when comparing options side-by-side, i.e., during joint evaluation (Hsee et al., 1999). When the same metrics are presented in isolation, they are harder to interpret and may be weighted less in evaluations. Essentially, various methods of presenting environmental impact will vary in their success in achieving the aforementioned goals of being informative yet easy to understand.

The present study investigates two methods of presenting environmental impact: composite ratings (e.g., Energy Star ratings issued by the EPA for appliances and buildings), which enable a rapid evaluation of a product compared to others, and translated attributes (e.g., fuel economy expressed in miles per gallon on EPA labels for gasoline vehicles).

Composite Ratings

Composite ratings are unified ratings derived from multiple component parts. They help situate a specific product within the spectra represented by those components. For instance, an Energy Star rating on an air conditioner signifies that it meets all of the EPA's minimum criteria for energy efficiency. Similarly, a New York City building with an energy efficiency grade of "A" indicates that it performs relatively well compared to similar buildings in similar climates. Energy ratings encompass multiple aspects of efficiency, such as heating, cooling, lighting, appliances, water management, and more. Instead of listing individual component, a composite rating consolidates the overall attribute into a single metric that is easily understood by laypeople.

Composite ratings offer two clear advantages. Firstly, they reduce cognitive load by encapsulating information into a single data point, thereby eliminating the need to simultaneously consider multiple attributes. Secondly, when the rating scale is clearly defined, it

removes the necessity to compare data points across multiple products to evaluate the performance of any given product. However, a limitation of composite ratings is that they may lack nuance, oversimplify multidimensional data, or prove less useful when comparing products with similar performance levels.

Translated Attributes

Some rating systems create multiple data points out of a single attribute to provide consumers with a more comprehensive understanding of a product's performance on this attribute and its various implications (Johnson et al., 2012; Ungemach et al., 2018). In 2019, the EPA fuel efficiency label was redesigned to incorporate a gallons per mile (GPM) metric alongside the miles per gallon (MPG) metric (US Department of Transportation [DOT], 2019). This redesign was prompted by an influential paper by Larrick and Soll (2008) which found that the conventional MPG metric led to distorted decisions to replace older cars with newer ones. Additionally, the redesign took the opportunity to convey a car's fuel economy using multiple other metrics, including its estimated annual fuel cost per year over five years and a greenhouse gas rating.

These highly correlated expressions were called “translated attributes” by Ungemach et al. (2018), who found that presenting multiple translated attributes, even if they are derivable from each other in theory, can actually increase the proportion of sustainable choices made by consumers. Different attributes signal different goals, e.g., financial value, environmental impact, the product's performance, etc. Individuals purchase cars for different reasons, and they tend to focus on the translations that aligns with their goals, while disregarding others. The concept of bounded rationality, which suggests that consumer preferences are constrained by their cognitive limitations and often influenced by heuristics, prevents individuals from deriving the relevant

translations themselves (Lichtenstein & Slovic, 2006; Payne et al., 1988, 1993; Simon, 1990; Ungemach et al., 2018). As Kahneman stated, “what you see is all there is” (Kahneman, 2011).

Prior work has shown that separating an attribute into components can increase its weight in the decision space (Dawes, 1979; Fischhoff et al., 1978; Ungemach et al., 2018; M. Weber et al., 1988). In the context of fashion, the environmental impact attribute can be partitioned into many different components such as CO₂ emissions, water usage, recycled content, etc. While findings from Chapter 3 suggest that consumers assign approximately double the weight to price relative to environmental impact when comparing clothing options, translated attributes may offer a solution to increase the weight of environmental impact in their decision-making process.

In addition to attribute-splitting effects, the counting and majority rule heuristics also explains why translated attributes may help increase preferences for one option over another (Alba & Marmorstein, 1987; Russo & Doshier, 1983; Ungemach et al., 2018; Zhang et al., 2006). Consider a scenario where a consumer is deciding between two options, A and B, and is given either composite ratings or multiple translated attributes for each. The former identifies Option A as having a lower environmental impact than Option B, while the latter indicates that it has lower emissions, lower water usage, and contains more recycled content than Option B. While both rating systems prompt the inference that Option A is more sustainable than Option B, the second presentation suggests that Option A surpasses Option B across three dimensions rather than just one.

Furthermore, translated attributes have been shown to serve as decision signposts by activating otherwise dormant objectives held by consumers (Ungemach et al., 2018). For example, encountering various quantifications of an item’s environmental impact via a garment

label may trigger conscious Gen Z consumers to reflect on their own pro-environmental values and lead them to a purchase that is better aligned with said values.

Hypotheses

This study aims to determine whether composite ratings or translated attributes of environmental impact differentially impact consumer choice between less sustainable (less expensive) clothing items versus more sustainable (more expensive) alternatives.

Note that components of the environmental impact attribute in fast fashion need not be highly correlated or derivable from each other. For instance, producing an item of clothing using a high percentage of recycled materials may still result in high CO₂ emissions. However, it makes intuitive sense for brands with a sustainable identity to try and minimize their environmental impact across all aspects of their supply chain. Consequently, for the purposes of this study, the components of the environmental impact attribute are highly correlated with each other *and* price. Specifically, the design will assume that more sustainable products are priced higher, have lower emissions, use less water, and contain a higher percentage of recycled materials. This study is guided by the following exploratory hypotheses:

- Composite ratings, translated attributes, and a combination of the two will differentially impact consumer choice. Specifically, the proportion of sustainable choices will vary across conditions (H1).
- Either composite ratings, translated attributes, or a combination of the two will be most effective at increasing the proportion of sustainable choices (H2).

H2 posits competing hypotheses based on the potential for each rating system to outperform the other. Translated attributes might triumph due to attribution-splitting effects, the majority rule, or their role as decision signposts. However, the increased cognitive effort required

to interpret them and their unfamiliarity to consumers might be disadvantageous. Conversely, composite ratings may be more effective due to their simplicity and ease of understanding. Lastly, an approach combining the virtues of both systems may yield the most effective results.

Study 3 Method

Open Science Practices

This study was preregistered at: https://aspredicted.org/FWC_JPR. The data and code are available at: <https://github.com/rohinimajumdar/dissertation>.

Participants

A power analysis for a repeated-measures ANOVA (within-between interaction) recommended a total sample size of 261 participants or 87 participants per condition to detect a small effect size of 0.1 with 0.90 power. However, Ungemach et al. (2018) recruited 341 participants for a similar experiment with a 2x2 design with 9 choice sets. Given the lower number of overall cells in the current design as well as fewer choice sets (3 each) in the current study, the target sample size was established at 600 participants or 200 participants per condition.

Gen Z adults born after 1996 and residing in the US were recruited via Prolific. 22 participants failed at least one attention check and were excluded from analyses. 5 participants who misrepresented their age in the prescreen and reported being born before 1997 were also excluded. The final sample included 576 participants of whom 46% were female, 48% were male, and 6% were non-binary with an overall mean age of 23 years. All participants in the final sample passed the predefined exclusion criterion for not speeding.

Procedure

All participants read an introductory paragraph describing a choice task which required them to imagine they were in the market for a new pair of jeans. Participants indicated their

choices across three choice sets specifically designed to compare preferences between less sustainable (cheaper) pairs of jeans and more sustainable (more expensive) alternatives (see Table 8). Counterbalancing the order in which more and less sustainable options were presented, i.e., as “Option A” or “Option B,” eliminated order effects as both options were equally likely to be the more sustainable choice across sets.

Table 8

Choice Sets

Choice Set	Metrics	Option A	Option B
1	Price (\$)	25	75
	Environment Rating	★	★★
	CO ₂ Emissions (kg)	28	16
	Water Usage (liters)	5103	3008
	Recycled Content (%)	0	31
2	Price (\$)	25	125
	Environment Rating	★	★★★★
	CO ₂ Emissions (kg)	28	4
	Water Usage (liters)	5103	901 liters
	Recycled Content (%)	0	62
3	Price (\$)	75	125
	Environment Rating	★★	★★★★
	CO ₂ Emissions (kg)	16	4
	Water Usage (liters)	3008	901 liters
	Recycled Content (%)	31	62

Note:

- Prices were included in all conditions.
- Environment ratings were included in the composite rating condition and the combination condition.
- CO₂ emissions, water usage, and recycled content were included in the multiple translations condition and the combination condition.

Designing Choice Sets

The three prices being tested were loosely guided by market research and prior research. The least expensive option, priced at \$25, corresponds to items from fast fashion brands such as

Shein and Forever 21. The most expensive option aligns with relatively more sustainable brands like Everlane and Kotn in terms of pricing but does not represent the pinnacle of sustainability in the market. While sustainable jeans span a wide price range, results from Chapters 2 and 3 indicate that \$125 may exceed the maximum amount most consumers are typically willing to pay for sustainable jeans. The middle option (\$75) was priced at the precise midpoint of the least and most expensive options.

The quantified environmental metrics were determined based on market research. First, the middle option was constructed using data from sustainability and lifecycle assessment reports published by Levi's, a popular denim brand, and MUD Jeans, a leading sustainable denim brand. Subsequently, metrics for the least and most expensive options were extrapolated while ensuring that deviations from the middle option were balanced in both directions. The middle option therefore emitted 16 kg of CO₂, used ~3000 liters of water, and comprised 31% recycled materials, while the least (most) expensive option emitted 75% more (less) CO₂, used 70% more (less) water, and comprised 62% (0%) recycled materials. By design, the least (most) expensive option was also the least (most) sustainable one.

Experimental Conditions

Participants were randomly assigned to one of three experimental conditions: composite rating, multiple translations, and combination. Participants in the composite rating condition only received prices and unified, abstract environment ratings, while those in the multiple translations condition received prices and information quantifying environmental impact (i.e., CO₂ emissions, water usage, and recycled content). The combination condition provided participants with all metrics.

The following definition of the environment rating accompanied choice sets in the composite rating and combination conditions: “environment rating refers to the environmental impact of producing the item accounting for carbon emissions, water usage, and use of recycled content, where ★★★ is best (i.e., lowest environmental impact).”

In the multiple translations and combination conditions, participants received the following definitions of the quantified environmental impact metrics: “CO₂ emissions refers to the amount of carbon dioxide (in kilograms) emitted from manufacturing and retailing the item,” “water usage refers to the amount of water (in liters) used in manufacturing and retailing the item,” and “recycled content refers to the percentage of the item made from recycled fabrics and other waste.”

Dependent Variables

The main dependent variable was the binary choice made between the less and more sustainable options within each choice set. The more (less) sustainable option was coded as 1 (0) for analyses.

Five additional questions were included as points of comparison between experimental conditions. Participants rated their agreement with each of the following statements on a 7-point Likert scale: “I only considered price when choosing between the different options,” “I considered environmental impact when choosing between the different options,” “the other (non-price) information provided was difficult to understand,” “the provided information helped me gain a thorough understanding of the environmental impact of producing each option,” “brands should provide consumers with information about the environmental impact of producing each clothing item.”

Individual Differences and Demographic Variables

Participants' self-reported fashion consumption behaviors, personal importance placed on fashion, and prior awareness of the ethical and environmental concerns associated with fast fashion were included as individual difference measures. Demographic questions included age, gender, race, education level, income, political orientation, and political party affiliation. Income, clothing budget, and the maximum amount they would pay for a new pair of jeans were also included.

Study 3 Results

Sustainable Choice

Collapsing across choice sets, the 576 participants in the sample made 1,728 choices, of which 395 (23%) were in favor of the more sustainable options. Table 9 shows how many times less and more sustainable options were chosen in each condition. Participants' preference for lower cost options was most apparent in the composite rating condition, with less sustainable options being chosen 82% of the time. In the multiple translations and combination conditions, low cost, less sustainable options were favored in 76% and 74% of choices respectively. A chi-square test comparing choice distributions revealed a significant difference across conditions ($\chi^2(2) = 11.39, p < .01$).

Additional chi-square tests with Yates' continuity corrections revealed significant differences in choice distributions between the composite rating and multiple translations conditions ($\chi^2(1) = 5.76, p < .05$) and between the composite rating and combination conditions ($\chi^2(1) = 10.31, p < .01$), but not between the multiple translations and combination conditions ($\chi^2(1) = 0.50, p = .48$). Overall, the results suggest that presenting multiple translations of environmental impact alone or in conjunction with a composite environmental rating was more

effective at encouraging sustainable behavior compared to presenting participants with only the composite environmental rating.

Table 9

Number of Less and More Sustainable Choices Across Conditions

Condition	Less Sustainable (Count)	More Sustainable (Count)	More Sustainable (%)
Composite Rating	476	106	18
Multiple Translations	423	135	24
Combination	434	154	26

A binomial logistic regression model (Table 10) regressing choice on condition and choice set (i.e., price pairings) and controlling for individual differences and demographic variables revealed significantly lower log-odds of choosing the more sustainable option in the composite rating condition compared to the combination condition. However, regression analyses did not detect significant differences between the composite rating and multiple translations conditions nor the multiple translations and combination conditions. Consistent with the aforementioned chi-square analyses, the regression analyses bolster the finding that the composite rating alone performed worse than the other two presentations. Overall, more political liberal participants, those reporting higher budgets for jeans, and those with prior awareness of the environmental and ethical concerns with fast fashion were more likely to choose the more sustainable option. Significant differences were also detected between choice sets, prompting further analyses that subset the data by choice sets.

Table 10*Regressing Choice on Condition and Choice Sets*

	<i>b</i>	<i>SE</i>	<i>z</i>	<i>p</i>
(Intercept)	-3.76	0.93	-4.03	.00***
Condition (Reference = Combination)				
Composite Rating	-0.52	0.16	-3.20	.00**
Multiple Translations	-0.19	0.16	-1.22	.22
Choice Set (Reference = \$25 vs \$75)				
Low: \$25 vs High: \$125	-0.33	0.16	-2.09	.04*
Mid: \$75 vs High: \$125	-0.50	0.16	-3.13	.00**
Race (Reference = White)				
Mixed	-0.52	0.22	-2.31	.02*
Black	0.48	0.23	2.11	.03*
Income	-0.07	0.02	-3.00	.00**
Political Orientation (Very Conservative to Very Liberal)	0.21	0.07	3.00	.00**
Time Since Last Clothing Purchase	-0.16	0.07	-2.19	.03*
Maximum Budget for Jeans	0.76	0.06	13.61	0.00***
Prior Awareness of Environmental Issues with Fast Fashion	0.36	0.08	4.24	0.00***
Prior Awareness of Ethical Issues with Fast Fashion	0.19	0.09	-2.42	.03*

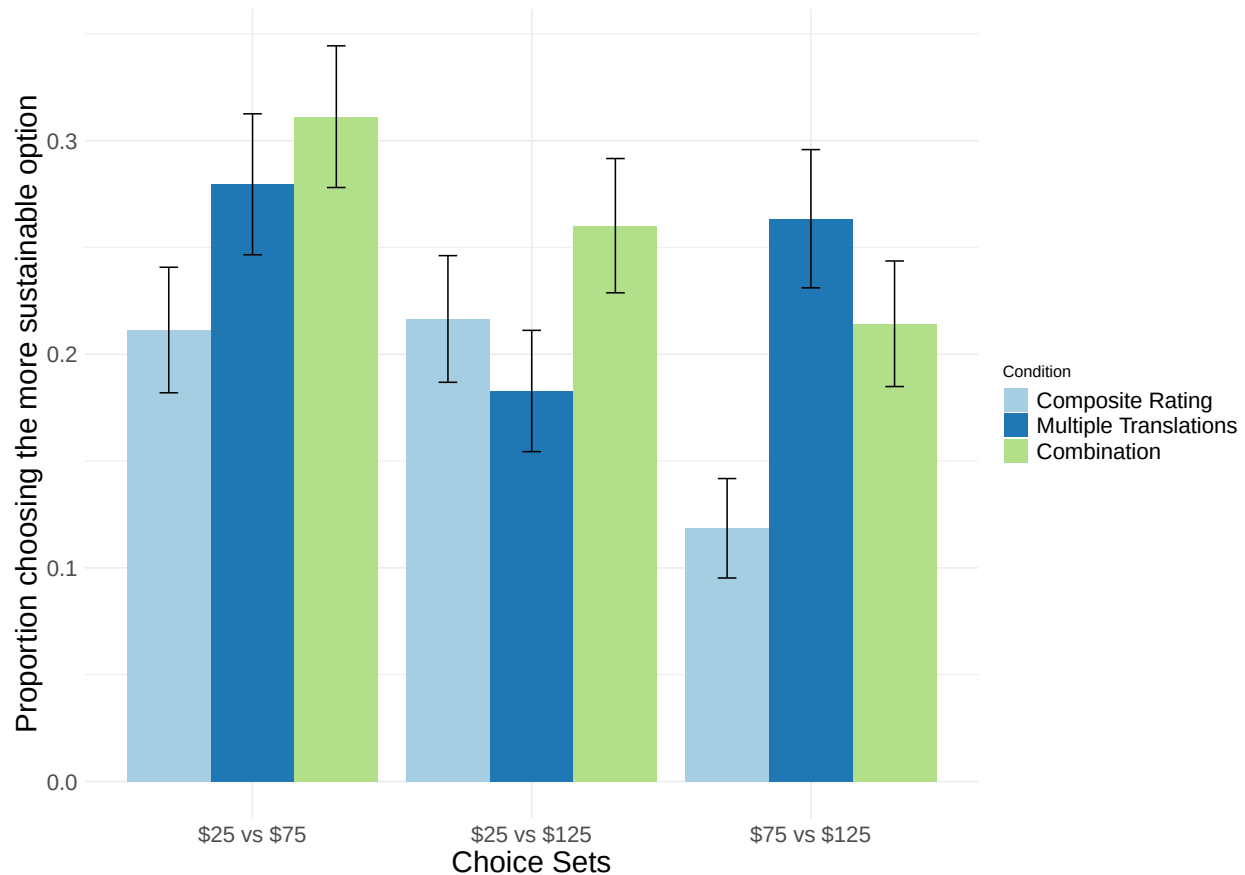
Note: Only significant coefficients are displayed for individual differences and demographic variables.

Differences Across Choice Sets

Figure 11 displays the proportion of choosing the more sustainable option broken down by condition and choice set. Visually, there appear to be relatively large differences between the composite rating and combination conditions, but not the multiple translations and combination conditions. The data also show the price-elastic demand for sustainable jeans, namely the lower overall proportions of choosing more sustainably in choice sets that included the most sustainable but most expensive option priced at \$125, compared to choice sets containing the low and mid-price options.

Figure 11

Proportion of More Sustainable Choices as a Function of Price Differentials Across Choice Sets



Note: Error bars are the standard error of the mean (SEM).

Low: \$25 vs Mid: \$75 Choice Set

Analyzing the choice set containing the low and mid-price options using a binomial logistic regression of choice on condition revealed that the combination condition had significantly higher log-odds of the more sustainable option (i.e., mid: \$75) being chosen compared to the composite rating condition ($b = .58$, $SE = .27$, $z = 2.17$, $p < .05$). The effect of multiple translations on choice did not significantly differ from that of the composite rating or a combination of the two presentations. In this case, when there is a 3x price differential, i.e.,

between \$25 and \$75, presenting multiple translations of environmental impact accompanied by a composite environmental rating is more effective relative to the latter alone.

Low: \$25 vs High: \$125 Choice Set

For the choice set with a 5x price differential between \$25 and \$125, binomial logistic regression analyses suggest that presenting a combination of multiple translations and a composite rating significantly increased the log-odds of choosing the sustainable option compared to the multiple translations alone ($b = 0.65$, $SE = .30$, $z = 2.20$, $p < .05$). The composite rating condition did not significantly differ from the other two presentations.

Mid: \$75 vs High: \$125 Choice Set

For the choice set with a 1.67x price differential between \$75 and \$125, multiple translations alone and when combined with the composite rating increased the log-odds of choosing the more sustainable option compared to the composite rating alone ($b = 1.24$, $SE = .33$, $z = 3.71$, $p < .01$; $b = 0.92$, $SE = .33$, $z = 2.76$, $p < .01$). The multiple translations and combination conditions did not significantly differ in their influence on choice.

Summarizing across choice set analyses, the combination condition either increased or at least did not lower sustainable consumption relative to the composite rating and multiple translations conditions. The composite rating alone lowered sustainable consumption relative to the combination condition when the choice was between the low and mid-price options with a 3x price differential. It also lowered sustainable choice relative to both other conditions when the choice was between the mid- and high price options with a 1.67x price differential. Multiple translations unaccompanied by the composite rating lowered sustainable consumption relative to the combination of the two when the choice was between the low and high price options with a 5x price differential. Taken together, these results suggest that presenting a combination of an

abstract, composite environmental rating alongside multiple translations of quantitative environmental impact metrics is a more reliable strategy than solely presenting either approach on garment labels.

Consumer Preferences Across Conditions

Independent sample t-tests comparing each condition to the other two revealed no significant differences in participants' self-reported prioritization of price over environmental attributes when evaluating options. Across conditions, participants were more inclined to agree that they only considered price ($M = 5.18$, $SD = 1.93$), and less inclined to agree that they also considered environmental impact ($M = 3.69$, $SD = 1.94$) per a paired samples t-test ($t(575) = 10.09$, $p < .01$). Participants were also uniformly in agreement that brands should provide information about the environmental impact of producing clothing items ($M = 5.51$, $SD = 1.28$).

The composite rating was easier to understand than the quantitative metrics with participants in the multiple translations ($M = 2.25$, $SD = 1.44$) and combination ($M = 2.17$, $SD = 1.32$) conditions reporting greater difficulty in understanding environmental impact than those in the composite rating condition ($t(342) = 2.48$, $p < .05$; $t(375) = 2.02$, $p < .05$). Despite these differences, however, participants across conditions generally disagreed that the environmental impact information was difficult to understand ($M = 2.12$, $SD = 1.29$). Additionally, participants in the multiple translations ($M = 5.41$, $SD = 1.31$) and combination ($M = 5.45$, $SD = 1.28$) conditions reported gaining a more thorough understanding of the environmental impact of each option compared to participants in the composite rating condition ($M = 4.69$, $SD = 1.61$; $t(368) = 4.78$, $p < .01$; $t(368) = 5.18$, $p < .01$). Across conditions, participants were generally in agreement that the information provided helped them gain a thorough understanding of the environmental impact of producing each option ($M = 5.18$, $SD = 1.45$).

Study 3 Discussion

This chapter investigated different methods of presenting information regarding environmental impact on garment labels to discern their effects on sustainable consumption. In one between-subjects condition, environmental impact was communicated through an abstract, composite rating, while another condition presented a set of quantitative metrics. A third condition employed a combination of these two approaches. Participants evaluated less sustainable (and less expensive) pairs of jeans versus more sustainable (and more expensive) options across three choice sets. The design was guided by competing hypotheses regarding the efficacy of composite ratings versus multiple translations of highly correlated environmental attributes. Overall, participants predominantly chose the less sustainable, more economical options, but some differences in choices between conditions emerged across choice sets.

The finding that participants predominantly favored the inexpensive options is consistent with the conclusions drawn in Chapters 2 and 3, which established consumers' reluctance to spend more on sustainable alternatives to fast fashion and their conscious prioritization of price over prosocial values when evaluating clothing options. Further, participants who were more politically liberal, had a higher maximum budget for jeans, and were already aware of the criticisms against fast fashion displayed a higher propensity to choose the more sustainable options in the present study. That consumers' self-reported budget for jeans predicted choice above and beyond income and budget for clothing in general provides compelling evidence for the role of mental accounting in fashion spending (Thaler, 1985; Thaler, 1999). These mental accounts likely influence how justifiable consumers perceive the high price of sustainable fashion to be. The observation about prior awareness levels resonates with existing research

indicating that consumers with higher levels of motivation and knowledge about nutrition tend to be more influenced by nutrition labels (Andrews et al., 2009; Guthrie et al., 2015).

Importantly, however, insights from the current study support the provision of both an abstract, composite rating alongside a number of metrics quantifying environmental impact, even if these metrics are highly correlated and potentially derivable from known attributes. This result aligns with Ungemach et al. (2018), who examined the role of translated attributes in nudging consumers towards fuel-efficient cars (with higher upfront costs but lower fuel costs than less-efficient alternatives). While the 2018 paper pinpointed the psychological mechanism enabling translated attributes to function as decision signposts as well as prompt the counting heuristic in consumers, the present study also gathered self-report measures which indicate that multiple translations aid consumers in developing a comprehensive understanding of the attribute in question. The inclusion of a composite rating, which consumers find easier to understand, reinforces judgments made based on the quantitative metrics. It is possible that less motivated consumers may exclusively attend to the composite rating rather than exerting effort in understanding the translated attributes. Whether consumers can be (or allow themselves to be) overloaded by information has been long-debated in consumer research, with many scholars arguing that “consumers stop far short of overloading themselves” (Jacoby, 1984). If this assertion holds true, omitting an easily digestible composite rating alongside numerous quantitative metrics could diminish the overall value of providing any information at all.

However, considering that the current design only incorporated three quantitative metrics, future research should investigate whether there are diminishing returns from including additional metrics. According to a data protocol released by Trace4Value (2023), academic, public, and private sector stakeholders in Europe are contemplating the inclusion of nearly 100

data points in their digital product passport pilot for textiles. While this wealth of information will undoubtedly prove valuable to European businesses and authorities in verifying compliance during Europe's transition to a circular economy, it may overwhelm consumers, making it challenging for them to effectively utilize these data in their decision-making processes. The present study therefore leaves unanswered the important questions regarding the quantity and types of data that should be included on garment labels, as well as how to effectively summarize them in composite ratings.

Moreover, insights from the current work are limited to instances where consumers are only considering two alternatives at a time and can readily compare said options along a limited number of data points. In reality, consumers have the option to choose from hundreds of retailers and thousands of products, making it challenging for them to directly compare their options as they could in an experimental setting. Online shopping could potentially address this challenge through the development of a specialized tool that lets consumers to shortlist various items, select the metrics most relevant to their preferences, and directly compare options along said metrics. However, envisioning this kind of comparison becomes more challenging in the context of in-person shopping. In such situations, consumers would be required to scan multiple digital product passports or physically examine garment labels for each product they are considering. This further highlights the importance of including a composite rating (such as star ratings, numerical rating scales, letter grades, etc.) on garment labels, as it aids consumers in quickly understanding the sustainability of a particular item relative to others. Even so, future research should also tackle the compounded challenges of choice and information overload on sustainable fashion consumption (Chernev et al., 2015).

One limitation of this work is in its comparison of only three price points and consequently, three price differentials (1.67x between \$75 and \$125, 3x between \$25 and \$75, and 5x between \$25 and \$125). As previously discussed, the disparity between fast and sustainable fashion (and in particular, jeans) can be much more severe in reality. Given that providing composite ratings and multiple translations yielded different proportions of sustainable choices across sets, a dependable strategy would be to provide a combination so as to cover a broader range of choice sets. Although, there is unlikely to be much variation in environmental impact among clothing items within similar price ranges. Differences in prices across equally harmful fast fashion may arise from economic and marketing factors rather than meaningful variations in sustainable production methods. Given that consumer choices are frequently constrained by budgets, investing effort into comparing metrics from similarly priced (fast) fashion brands may prove futile. At the same time, it may be naïve to expect consumers to simultaneously consider items spanning a wide price range. Once again, the price advantage of fast fashion over sustainable fashion poses a barrier to initiatives attempting to address the fast fashion crisis without addressing this price disparity.

The current design deliberately omitted a control condition given that the main objective of this research was to ascertain the relative efficacies of different ways to present information on garment labels, assuming their usage as a medium for conveying such information to consumers. Importantly, this study did not aim to study whether garment labels should contain such information—see Chapter 2’s exploration of the value of evidence-based interventions in the context of fast fashion. However, the question of whether consumers would be sufficiently motivated to voluntarily inspect garment labels or scan digital product passports in real-life situations is a nontrivial one and warrants attention. It is important to note that this is not a

critique of such initiatives, which are certainly valuable, especially considering the current lack of accessible and trustworthy information available to consumers. Indeed, given the size of the fashion market and its continued rapid growth, even if only a small percentage of consumers alter their consumption behaviors as a result of having access to this information, it would still be beneficial in terms of reducing consumption and waste. That said, future research should explore strategies to promote the recognition of garment labels as valuable information resources among consumers, especially when initiatives like digital product passports are implemented. Additionally, research should aim to find ways to motivate consumers to actively seek out and utilize this information.

If the digital product passport initiative succeeds in the EU, other governments, including the US, should contemplate adopting similar approaches to improve consumer access to reliable sustainability information (alongside more traditional economic policies). This work offers general guidelines on how to effectively present such information on garment labels to promote sustainable fashion consumption. In summary, if policies proposing the use of garment labels to communicate sustainability attributes gain traction in the US, the recommended approach is to combine a composite rating with quantitative metrics. This pairing helps consumers both easily gauge whether an item is sustainable (compared to others) and gain a thorough understanding of its environmental footprint. Incorporating insights from Chapter 3, relevant authorities should consider offering information on both dimensions of sustainability—ethical practices and environmental impact. This is particularly important given that many American consumers prioritize ethical considerations as much as, if not more than, environmental concerns.

Chapter 5:

Conclusion

Conclusion

This chapter begins with a summary of findings across the empirical studies described in Chapters 2, 3, and 4, followed by an evaluation of proposed strategies to address the fast fashion crisis. It concludes with a discussion of the policy implications of this work and directions for future research on this topic.

Summary

Despite their strong prosocial and pro-environmental values, members of Gen Z are leading consumers of fast fashion in the US, with their patronage labeled as both an “addiction” and a “paradox” by the media (Chapter 1). Across three studies, this dissertation explored behavioral science solutions to the fast fashion crisis among American Gen Z, while also reconsidering whether it should be characterized as an attitude-behavior gap.

Chapter 2 investigated the effectiveness of evidence-based interventions, elite cues, and a combination of both on Gen Z’s beliefs, policy preferences, and behavioral intentions related to fast fashion. Beliefs were highly responsive to treatments, particularly those integrating evidence of exploitative labor practices in fast fashion. Conversely, policy preferences remained unchanged by any of the treatments. Notably, however, no interventions increased willingness to pay for sustainable alternatives to fast fashion, though a combination of evidence and a political elite cue attenuated intentions to purchase from ultrafast fashion brands like Shein. Furthermore, a combination of evidence and a social media elite cue increased future intentions to consume sustainable fashion from secondhand outlets.

Chapter 3 assessed the relative impact of price, environmental impact, and brand ethics clothing purchase decisions, as well as the alignment between consumers’ stated and revealed preferences. As predicted, price emerged as the most important revealed attribute. However,

contrary to expectations, consumers appeared to be conscious about the underlying preferences guiding their behaviors as their revealed preferences were consistent with their stated preferences. Additionally, the results highlight that consumers prioritize brand ethics over environmental impact, although the disparity between these attributes was not as severe as compared to price, which was revealed to be roughly twice as importance.

Chapter 4 sought to identify how best to present information about sustainability attributes on garment labels to encourage more sustainable choices among consumers. It tested a unified, composite rating of environmental impact against multiple translated attributes of the same, which included quantified data on CO₂ emissions, water usage, and recycled content composition for each product. The results reiterated the influence of price on consumer decisions, as less expensive alternatives were overwhelmingly preferred across all choice sets. However, while composite ratings and translated attributes had mixed individual success, labels pairing both were most reliably effective in increasing the proportion of consumers choosing the more sustainable alternative.

Individual differences and demographic variables exerted influence on consumer behavior across all studies. In particular, consumers who were already aware of the ethical and environmental concerns associated with fast fashion tended to make more sustainable purchase decisions. This implies the presence of an information deficit in some consumers that can be addressed through measures such as providing sustainability information via garment labels. Interestingly, consumers' self-reported maximum budget for jeans, the focus of all hypothetical purchase scenarios across studies, emerged as a predictor of sustainable consumption even when controlling for income. This provides compelling evidence for the role of mental accounting in

fashion budgeting, affecting whether consumers perceive the high price of sustainable fashion as justified.

While all studies in this dissertation ultimately aimed to encourage prosocial behavior, they relied on two contrasting overarching ideas of how to achieve this goal, with evidence obtained for each one. Both approaches have merits and deficits discussed in the following subsection.

Opportunities and Challenges for Changing Minds

This approach hinges on individuals, as consumers and voters, receiving knowledge and normative cues from elites and institutions, and subsequently updating their beliefs, preferences, and behavioral intentions related to the problem. Chapter 2 found that providing evidence and elite cues can worsen perceptions of fast fashion, that combining evidence with a political elite cue can decrease intentions to purchase fast fashion in the future, and that combining evidence with a social media elite cue can increase intentions to shop for clothes secondhand. The success of this approach is partly dependent on the survival of the public discourse surrounding the problem. Adequate opportunities must be created for novel information to reach the intended audience, undergo reflective processing, and catalyze enduring shifts in beliefs, preferences, and intentions that directly correspond to the target behavior.

For example, as the media continues to report on ongoing developments in US congressional activity against Shein, some consumers may apply impressions formed on the basis of this information when shopping in the future and possibly reconsider purchasing from the brand. An obvious obstacle to achieving this outcome is that consumers are also subject to forces pulling them in the opposite direction, such as advertisements from Shein, and endorsements from peers and social media influencers. Since it is likely that the volume of pro-

consumption cues exceeds that of the anti-consumption cues, the net effect may still favor overconsumption. Additionally, consumers might choose to avoid Shein in response to the discourse but instead switch to other fast fashion brands that are also harmful yet not under the same level of public or elite scrutiny (Chapter 2).

However, should the US government pursue industry-wide policy action for fast fashion in the future, it would serve as a much stronger institutional signal compared to announcing an investigation into Shein. If the EU's suite of policies is successful in addressing the crisis, it may prompt other countries, including the US, to pursue similar strategies. Moreover, if domestic public sentiment against the harms of fast fashion continues to grow independently of international developments, pressure from consumers, activists, and the media may prompt the US government to act sooner. Promisingly, there is high support from Gen Z for regulations aimed at increasing supply chain transparency and improving labor conditions for garment workers, even if these regulations would result in higher costs for fashion consumers (Chapter 2).

Opportunities and Challenges for Changing Choice Environments

Choice architecture refers to a set of tools that can be used to construct choice environments that nudge consumers towards particular choices (Johnson et al., 2012; R. H. Thaler & Sunstein, 2008). The ethics and effectiveness of this approach have been extensively studied in other contexts (Bruns et al., 2018; Sunstein, 2017). A major application of nudges is to help consumers make choices that align with their best interests and that also reflect socially desirable behaviors.

In the current work, Chapter 3 somewhat unexpectedly established that Gen Z consumers consciously prioritize price over sustainability attributes and that their purchase decisions reflect these preferences. This raises the question of whether nudging consumers towards sustainable

fashion is still ethical if consumers value other factors (e.g., price) over sustainability attributes. Firstly, it is important to note that proponents of nudging defend its ability to encourage beneficial decisions without restricting freedom of choice (Sunstein, 2015; Thaler & Sunstein, 2008). Secondly, it can be argued that decision aids such as enhanced garment labels benefit consumers by facilitating informed choices. Chapter 4 found that offering multiple translations of sustainability attributes helped consumers gain a thorough understanding of the environmental impact of clothing items. Together with the finding that prior awareness of the criticisms of fast fashion is a consistent predictor of sustainable choice, this highlights how enhanced garment labels may neutralize individual differences in information deficits.

Indeed, addressing the fast fashion crisis requires both curbing overconsumption and substituting fast fashion with sustainable alternatives. Garment labels containing sustainability attributes may activate dormant environmental values in conscious consumers, who always have the option to refrain from purchasing the item in question. Importantly, this outcome would not conflict with their preferences. Furthermore, consumers who opt for sustainable fashion over fast fashion may potentially experience a lower cost per wear of the former compared to the latter, owing to differences in durability. This outcome also aligns with their prioritization of price over other attributes, as they would be saving money in the long run.

Lastly, the current landscape can be argued as nudging consumers towards unsustainable choices by default. Since consumers currently lack access to sustainability attributes when making fashion purchase decisions, the price differential between fast and sustainable fashion becomes particularly influential in the absence of information on other crucial attributes. Therefore, because decisions are not made in vacuums, constructing choice environments to nudge consumers towards sustainable options impedes freedom of choice only as much as the

default choice environment does. Note that Chapter 4 serves as just one example of what nudging can entail in the context of fast fashion. There are many other approaches not studied here that have the potential to encourage sustainable choices, perhaps even more effectively than enhanced garment labels, as they may require less deliberation and cognitive effort in comparison (see Chapter 1; Johnson et al., 2012; Weber, 2013).

Policy Implications

The most consistent finding from this work is that Gen Z's demand for fashion is highly price-elastic. Across all studies, consumers consistently displayed strong preferences for more affordable alternatives and were generally reluctant to pay premiums for sustainable fashion. Price was revealed to be twice as important compared to the sustainability attributes, and consumers were acutely aware of this preference. Additionally, individual differences in the maximum amount consumers were willing to spend on jeans emerged as a significant predictor of sustainable choice.

Given these realities, the most prominent lesson highlighted by this set of studies is that addressing fast fashion will likely necessitate some economic policy intervention to level the playing field between fast and sustainable fashion in terms of price. Without such an intervention, replacing fast fashion with sustainable fashion will, unfortunately, be extremely challenging. Fiscal solutions include imposing taxes on fast fashion or subsidizing sustainable fashion. However, the latter may encounter significant opposition due to the already strained federal budget and contentions surrounding its allocation. Other policies such as allowing clothing brands to retail in the US only upon meeting some predetermined minimum standards for sustainability may also be warranted.

Fortunately, consumers were generally in favor of taxing fast fashion brands for failing to meet transparent standards in reporting on their supply chains (Chapter 2). However, they were even more supportive of a proposal that mandated brands to pay garment workers a living wage, even if it resulted in increased personal costs to consumers (Chapter 2). Indeed, consumers placed more importance on brand ethics than they did on environmental impact (Chapter 3). Consumers, in their dual roles as voters, may therefore be supportive of policy measures that penalize the negative externalities of fast fashion, particularly the social harms. A similar justification has previously been provided for introducing carbon pricing, as it penalizes negative externalities to the climate while incentivizing emission reduction (Baranzini et al., 2017; Ockenfels et al., 2020; Weitzman, 2014). These measures essentially level the relative prices of all goods and services (sustainable and unsustainable), in alignment with the polluter pays principle (Ambec & Ehlers, 2016; Schwartz, 2010).

One uncertainty regarding these policies is the extent to which they will succeed in leveling prices between fast fashion and sustainable fashion. France's recent bill proposes imposing a fee of up to €10 on fast fashion items (Reuters, 2024a). While this measure will significantly increase the cost of many fast fashion items—particularly the cheapest ultrafast fashion products from brands like Shein—and therefore decrease the quantity demanded for them, it may not sufficiently bridge the price gap to sustainable fashion. Consequently, while such a policy can mitigate overconsumption, it may need to be complemented with additional measures such as nudges to promote sustainable fashion consumption. Traditional economic solutions and nudges should therefore be thought of as complements rather than substitutes.

Recent Policy Developments and Moral Implications of Regulating Fast Fashion

The French lower house of parliament recently approved a bill penalizing ultrafast fashion companies like Shein. This law, if approved by the senate, would increase the price of individual ultrafast fashion products by up to €10 by 2030, and would also impose a ban on advertising such products (Reuters, 2024a). The French environmental ministry also plans to propose an EU-wide ban on exporting used clothes to address the growing issue of textile waste, especially in LMICs (Bick et al., 2018; Reuters, 2024b).

The price penalty aspect of the bill has provoked public discontent, with some describing it as unfairly punishing lower-income individuals (France24, 2024). While it is important for policymakers to weigh the moral implications and potential discriminatory consequences of new laws, it must be acknowledged that all decisions entail tradeoffs. Failing to introduce measures to curb fast fashion would result in the continuation of the status quo, which is also discriminatory (particularly towards garment workers and LMICs).

Future Directions

The exclusive focus on Gen Z is both a design feature and a limitation of this work. Given the mixed success of evidence-based interventions, elite cues, and enhancing garment labels on Gen Z's beliefs and behaviors, a clear next step is to extend this work to older generations and in particular, those who are also major consumers of fast fashion, i.e., Millennials (generational cohort born between 1981-1996; Dimock, 2019). There is considerable overlap between Millennial and Gen Z values, and Millennials also have more spending power due to their longer tenure in the workforce. Consequently, they may be more capable of and willing to pay a premium for sustainable fashion. However, whether their demand is as price-elastic as that of Gen Z is an open empirical question. More importantly, the findings from this

work are not necessarily specific to Gen Z and may be especially applicable to the generations that follow. This is because they too will enter the fashion market in the digital age with fast fashion dominating the market unless consumption norms change prior to their entry.

Replications and extensions of this work should bear in mind that general attitudes such as prosocial or pro-environmental values do not typically predict specific behaviors (Bamberg, 2003). Instead, future interventions should identify situation-specific cognition that directly corresponds to the consumption of fast and sustainable fashion. Given that these behaviors are determined by multiple beliefs (attitudes, values, etc.) to varying extents, adopting a norm network approach may help identify the specific variables that most strongly predict the target behaviors. This methodology has previously been used to understand political belief systems and voting behavior (Brandt et al., 2019; Dalege et al., 2016, 2017), as well as energy- and environment-related behaviors (Sparkman & Weber, 2023; Majumdar et al., under review).

Recognizing that general attitudes do not predict specific behaviors also challenges the liberal use of “attitude-behavior gaps” to describe what could indeed be conscious and rational economic behaviors (Chapter 3). Given the tradeoffs between price, environmental impact, and brand ethics when deciding between fast and sustainable fashion, Gen Z consumers demonstrate a keen awareness of their preferences among these attributes, and their choices perfectly reflect these preferences. As such, while there may be a gap between their general attitudes and consumption behaviors, there does not seem to be a gap between their situation-specific attitudes and consumption behaviors. Based on this observation, we should reexamine other phenomena (especially those involving high-cost behaviors) labeled as attitude-behavior gaps in case the so-called misalignment actually is the result of intentional tradeoffs between the attitude in question and other decisional dimensions. If undesirable behaviors perceived as paradoxical are indeed

rational, addressing issues such as unsustainable consumption necessitates solutions that focus on reframing or leveling incentives, rather than “closing a gap.” Of course, it is possible that Gen Z is a particularly aware group of consumers and that other demographics may exhibit attitude-behavior gaps in their consumption of fashion.

The possibility that certain types of elites may differentially exert influence on certain types of behaviors is intriguing and warrants more attention. Future work should investigate the influence of political elite cues and institutional signals on curtailment behaviors (i.e., reducing or limiting consumption), and the influence of social media elite cues to encourage alternative sustainable behaviors. Both curtailment and replacement strategies are important in the context of fast fashion since there is a need to curb the overconsumption of fast fashion (and fashion in general) while simultaneously encouraging consumers to opt for more sustainable alternatives in the future. Further research is necessary to deepen our understanding of the currently understudied mechanisms underlying social media elite influence. As stated by Van Boven & Sherman (2021), “elite influence rests on social norms.” However, which group’s social norms are social media influencers actually perceived as signaling? One concern is that cues from greenfluencers may be ineffective if consumers do not identify with their wealth and status or do not perceive these cues as representative of social norms in their peer or referent groups.

As other countries begin implementing their policies to tackle fast fashion, it will be interesting to study stakeholder reactions (from both consumers and producers) as well as the economic and environmental consequences of these measures. Domestically, the evolution of public sentiment in response to the gaining momentum of US congressional activity against fast fashion will be worth studying. Prior research has demonstrated the power of institutional signals in shaping norm perceptions (Clark et al., 2024; Tankard & Paluck, 2017). The prospect of

institutional action against fast fashion influencing a sufficient proportion of individuals to reach a social tipping point against it is especially interesting (Centola et al., 2018; Constantino et al., 2022). Furthermore, future research should also investigate the long-term effects of new policies and nudges in this context, specifically examining whether these measures can create new norms over time by habituating certain behaviors (Constantino et al., 2022; Gelfand et al., 2024). The evolution of seat belt usage in the US exemplifies the emergence of new norms stemming from regulations. Initially, legislating seat belt mandates in the 1980s faced considerable opposition (Seo, 2021). However, over time, seat belt laws and usage have become habitual and normative (Thuen & Rise, 1994; Wittenbraker et al., 1983).

Currently, there is a pressing need for research on the acceptability of nudging in the context of fast fashion. Specifically, it is important to understand fashion consumers' sentiments regarding nudges that involve unconscious and conscious decision processes (Weber, 2013). The ethics of nudging have been extensively debated in other contexts, with research finding that people prefer interventions that target more deliberative processes, but also that these preferences are malleable (Bruns et al., 2018; Davidai & Shafir, 2020; Hagman et al., 2015; Jung & Mellers, 2016; Loewenstein & Chater, 2017; Schubert, 2017; Sunstein, 2015). Insights from Chapter 4 suggest that consumers will find enhanced garment labels to be informative and helpful in gaining a thorough understanding of the sustainability attributes of different products. However, while consumers may appreciate this type of nudge precisely because it necessitates conscious deliberation, the cognitive effort required for comparing labels might serve as a barrier to consumers actually utilizing them. Future research should explore whether consumers would voluntarily refer to enhanced garment labels and strategize ways to encourage their usage.

Lastly, future research endeavors should prioritize gaining a comprehensive understanding of policy preferences concerning fast fashion, potentially through an extensive conjoint experiment similar to the one used by Bergquist et al. (2020) to understand support for climate action in the US. Understanding preferences for tax incidence and how the burden of action against fast fashion should be distributed is crucial. Specifically, the question arises as to whether consumers believe that producers should shoulder most of the incidence or if they would be willing to accept the tax burden themselves. Variability in judgments regarding who is more responsible for the negative externalities of fast fashion is likely to influence these preferences. Certainly, preferences between traditional economic policies (such as bans, tariffs, taxes, and subsidies) versus nudges should also be investigated.

Addressing fast fashion will likely necessitate a hybrid policy approach that combines traditional economic policies with nudges (Johnson et al., 2012; Loewenstein & Chater, 2017). It is important to note that these approaches are not mutually exclusive and can be employed in complementary ways. Concurrently, intervening on and scaling-up individual-level beliefs, social norm perceptions, and behaviors all remain crucial mechanisms for achieving social change.

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Appendix

A.1 Control Stimulus

Please read this section carefully before proceeding.

Background information:

Fashion is among the world's most crucial industries. With a multi-trillion-dollar valuation, the fashion industry employs millions of individuals globally throughout its supply chain (i.e., chain of production). Furthermore, the industry's expansion is projected to continue in the years ahead. This expansion can be largely attributed to the rise of fast fashion, defined as "inexpensive clothing produced rapidly by mass-market retailers in response to the latest trends."

In contrast, some clothing brands produce at a slower rate, also known as sustainable fashion. This is defined as clothing that has been produced with a focus on minimizing environmental impact (e.g., low carbon emissions and water usage) and ensuring labor protections for garment workers throughout the supply chain.

Note that there are different ways to consume fashion sustainably including re-wearing old clothes rather than buying new clothes, buying (or thrifting) secondhand clothing, or shopping sustainable brands when buying new clothes.

A.2 Data Stimulus

As it continues to grow, the rise of fast fashion has attracted increased scrutiny. Concerns have been raised regarding fast fashion's environmental impact and use of cheap labor in their supply chains.

Below is an excerpt from a brief from International Law and Policy Brief (ILPB), a publication sponsored by The George Washington University Law School's (GW Law) International Law Society.

"The fast fashion industry employs approximately 75 million factory workers worldwide. Of those workers, less than 2% of them make a living wage. Many garment workers work up to 16 hours a day, 7 days a week. The textile industry also uses child labor particularly because it is often low skilled.

The production of fast fashion clothing employs the use of 8,000 synthetic chemicals. Some of these chemicals have been shown to cause cancer and factory workers are regularly exposed to and breathing in these chemicals.

Numerous fast fashion factories have been identified as not meeting structural safety codes. The Rana Plaza Factory in Bangladesh collapsed in 2013 killing 1,100 people and injuring 2,500 more. After this incident, building inspections were done on 1,106 factories used by fast fashion companies and 80,000 safety related issues were found."

In the excerpt you just read, what percent of fast fashion workers earn below living wage?

- 98%
- 12%
- 46%

What other claims about working conditions in fast fashion did the excerpt you just read contain?

- Workers are exposed to carcinogenic chemicals
- Factories do not meet safety standards
- Factory workers work fewer than 40 hours a week

A.3 Political Stimulus

As it continues to grow, the rise of fast fashion has attracted increased scrutiny from the United States government. Concerns have been raised regarding fast fashion's environmental impact and use of cheap (or forced) labor in their supply chains.

Below is an excerpt from a CNN news article reporting on recent congressional activity around fast fashion.

 [Markets](#) [Tech](#) [Media](#) [Calculators](#) [Videos](#)

Congress presses Chinese fast-fashion giant Shein on forced labor

 By [Nathaniel Meyersohn, CNN](#)
🕒 2 minute read · Published 12:02 PM EDT, Tue May 2, 2023

“In a letter to the Securities and Exchange Commission, a bipartisan group of 22 US House of Representatives members asked the SEC to require that Shein certify that any of its products that are made in China do not utilize forced labor. Earlier this month, a US congressional commission called out Shein and Temu in a report that suggested the companies and others in China were potentially linked to the use of forced labor.”

In the excerpt you just read, what are fast fashion companies like Shein being accused of?

- Exploiting forced labor in their supply chains
- Pursuing an aggressive marketing strategy
- Tracking sensitive consumer data

In the excerpt you just read, who is raising these ethical concerns against fast fashion companies?

- A bipartisan group of democrats and republicans in the US House of Representatives
- A group of democrats in the US House of Representatives
- A group of republicans in the US House of Representatives

A.4 Social Media Stimulus

As it continues to grow, the rise of fast fashion has attracted increased scrutiny on social media. Concerns have been raised regarding fast fashion's environmental impact and use of cheap (or forced) labor in their supply chains.

Below is an excerpt from an Instagram post made by social media personality Venetia La Manna (290k followers across Instagram, TikTok, and X, the platform formerly known as Twitter). La Manna is one of many online celebrities leveraging their platforms to raise awareness about the fast fashion industry.



[Caption text from the above Instagram post:]

“Shein? SHE-OUT!

ultra fast fashion brand @sheinofficial held a three day pop up in central London this weekend, so you bet we were there to hold the billionaire helmed, multi national corporation to account for their garment worker exploitation and overproduction.

if you're new to Shein's abhorrent ways, please watch the C4 documentary Inside Shein' on YouTube.”

In the excerpt you just read, what are fast fashion companies like Shein being accused of?

- Exploiting forced labor in their supply chains
- Pursuing an aggressive marketing strategy
- Tracking sensitive consumer data

In the excerpt you just read, who is raising these ethical concerns against fast fashion companies?

- Social media celebrities
- Classical musicians
- No one

A.5 Dependent Measures

It is acceptable for consumers to buy clothes from fast fashion brands.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

The fast fashion industry has a negative impact on the environment.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

The rapid growth of the fast fashion industry is concerning.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

The fast fashion industry employs exploitative labor practices.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree

- Somewhat agree
- Agree
- Strongly agree

The treatment of garment workers in the fast fashion industry constitutes modern day slavery.

- Strongly disagree
- Disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Agree
- Strongly agree

Imagine that in the near future you are in the market for a new pair of jeans. You find yourself debating between two alternatives: one from a fast fashion brand and one from a sustainable fashion brand. Assume that the color and fit of both alternatives are equivalent and to your liking.

If the pair of jeans from the fast fashion brand costs \$25, how much money would you be willing to pay for the pair of jeans from the sustainable brand?

- I would not pay more for the sustainable alternative.
- I would pay up to \$30 for the sustainable alternative.
- I would pay up to \$35 for the sustainable alternative.
- I would pay up to \$40 for the sustainable alternative.
- I would pay up to \$45 for the sustainable alternative.
- I would pay up to \$50 for the sustainable alternative.
- I would pay more than \$50 for the sustainable alternative.

Before choosing either alternative in the previous scenario, how likely would you be to look for a comparable pair of jeans in the following options?

- In a thrift store (or similar)
 - Very unlikely
 - Unlikely
 - Neither likely nor unlikely
 - Likely
 - Very likely
- In an online marketplace for secondhand clothes
 - Very unlikely
 - Unlikely
 - Neither likely nor unlikely
 - Likely
 - Very likely
- Online from retailers such as Shein and Temu
 - Very unlikely
 - Unlikely
 - Neither likely nor unlikely

- Likely
- Very likely
- Online or in stores of retailers such as Forever 21 and H&M
 - Very unlikely
 - Unlikely
 - Neither likely nor unlikely
 - Likely
 - Very likely

To what extent would you support or oppose the following policy proposal aimed at the fashion industry? Levying a “sin” or excise tax on clothes from fast fashion brands that fail to transparently report labor practices in their supply chains.

- Strongly oppose
- Oppose
- Somewhat oppose
- Neither support nor oppose
- Somewhat support
- Support
- Strongly support

To what extent would you support or oppose the following policy proposal aimed at the fashion industry? Requiring fast fashion brands to guarantee living wages for all garment workers employed domestically and overseas even if it would increase costs for consumers.

- Strongly oppose
- Oppose
- Somewhat oppose
- Neither support nor oppose
- Somewhat support
- Support
- Strongly support

B.1 Introduction

Please read this section carefully before proceeding.

Background information:

When buying clothes, consumers consider factors including but not limited to: fit, style, color, brand, material, quality, etc.

In this survey, we are interested in the extent to which consumers consider certain factors when buying clothes. You will be presented with information about three factors that you may or may not consider relevant for yourself, but that will be referenced later in the survey.

Subsequently, you will be guided through two short tasks in which you will be asked to imagine that you are in the market for a new pair of jeans for yourself.

Clothing brands vary in price.

Keep the following range in mind whenever a question references price, unless prices are specified in the question:

\$: Inexpensive

\$\$: Average

\$\$\$: Expensive

Clothing brands vary in their environmental impact.

Some questions may reference an environmental rating, which is based on several factors including the extent to which the brand's supply chains emit carbon emissions, use/waste water, use/discharge pollutants, etc.

Range:

★: Bad; brand's environmental impact is larger, i.e., worse than average clothing brand

★★: Average; brand's environmental impact is comparable to average clothing brand

★★★: Good; brand's environmental impact is minimal, i.e., better than average clothing brand

Clothing brands vary in their ethics.

Some questions may reference an ethics rating, which is based on the clothing brand's treatment of garment workers. Brand ethics are assessed based on several factors including the treatment of workers, wages, hours, factory conditions, use of forced or child labor, etc.

Range:

✓: Bad; suspected to uphold unethical labor practices throughout supply chains

✓✓: Average; ethics throughout supply chains are comparable to average clothing brand
✓✓✓: Good; known to uphold ethical practices throughout supply chains

B.2 Stated Preference Task

For this task, imagine that you are in the market for a new pair of jeans for yourself and are choosing between some pairs from different brands.

Keep in mind that clothes and brands differ on various dimensions. The factors referenced in the next question may or may not be relevant to your decision criteria when buying clothes.

Please rank the relative importance of each of the following factors when you are buying a new pair of jeans for yourself.

Click and drag the options below to reorder them from most important at the top (1) to least important at the bottom (3).

- Price
- Environmental impact
- Brand ethics

B.3 Conjoint Preference Task

For the next few questions, imagine that you are in the market for a new pair of jeans.

You will be asked to choose the pair of jeans you would most likely purchase from the available options (“1,” “2,” or “3”). Each pair is from a different brand.

Assume that the color, style, quality, etc. are all exactly the same and that each pair would fit you well. The options only differ on the dimensions displayed.

You will be shown the price of each pair of jeans in addition to the brand’s environmental and ethics ratings as previously described.

(X/4) Choose your most preferred option from the ones displayed below:

	Option 1	Option 2	Option 3
Environmental Rating			
Ethics Rating			
Price			
Choice:			

Note: Table 2 in the main body of this document describes attributes and levels.