

Towards a circular economy: Understanding consumers' moral stance on corporations' and individuals' responsibilities in creating a circular fashion economy

ABSTRACT

The fashion industry has typically adopted the current linear economy's "take-make-use-throwaway" system, an approach that has adverse side effects, such as economic loss, environmental destruction, and threats to human society. To address these adverse consequences from fashion's linear system, governments and business leaders are advocating the societal need for a shift from the linear economy to the circular economy, which endorses the "take-make-use-reuse" system. Despite the growing demand for changing to a circular economy in the fashion business (circular fashion [CF]), two critical issues remain understudied in the current literature. First, although academic research on CF has increased in the past five years, the lack of scalable CF research has hindered the industry's ability to increase its adoption of a truly circular economy. Second, although the fashion industry faces complex challenges in instituting CF as just one supply chain member's (a fashion retailer's) commitment is not sufficient to create a truly CF without the involvement of others (consumers), there is yet no empirical research that investigates whether consumers morally support the idea of a CF and feel obliged to take part in fashion businesses' CF offerings. Thus we investigate whether and how morally grounded traits—corporate moral responsibility (H1+), consumer moral responsibility (H2+), their interaction effect (H3), and corporate hypocrisy (H4-)—influence consumers' attitudes and engagement (H5+) toward fashion corporations' CF offerings. Our empirical evidence, using a U.S. consumer survey dataset of 351 responses, shows that all of these hypotheses are supported. The results provide important theoretical and managerial implications.

KEYWORDS

Circular economy; circular fashion; moral responsibility; Moral Responsibility Theory of Corporate Sustainability; sustainable development; stakeholder engagement; fashion consumer; and environmental policy

Towards a circular economy: Understanding consumers' moral stance on corporations' and individuals' responsibilities in creating a circular fashion economy

Abbreviations

CF: Circular Fashion

MRCS: Moral Responsibility Theory of Corporate Sustainability

1. INTRODUCTION

The effects of the textile and clothing industry (the fashion industry) are extensive, as clothing is a fundamental part of our everyday lives. This illustrates the significant influence our daily fashion production and consumption practices have on the environment, society, and economy. However, because the industry is founded upon a wasteful economic system—the linear economy's “take-make-use-throwaway” system, the industry has highly significant adverse effects such as environmental destruction, economic loss, and threats to human society (Ferasso et al., 2020; Ki, Chong, & Ha-Brookshire, 2020). In fashion's linear system, the volume of fashion production has almost doubled since 2002, while less than 1% of these materials are recycled into new clothing or other products (Ellen MacArthur Foundation [EMF], 2017). This overproduction has resulted in markets being saturated and more unsold garments piling up (Niinimäki, 2018). For example, Swedish fast-fashion retailer H&M had amassed £3.4 billion (approximately US\$4.4 billion) in unsold merchandise as of April 2020, much of which is destined to be burned to protect the brand's image and price integrity (Cook, 2020). Globally, fashion consumers are also missing out on US\$ 460 billion worth of value annually by throwing used clothing away, which ends up in landfills and incineration, putting human wellbeing at risk (EMF, 2017). To make matters worse, nearly 1.2 billion tons of greenhouse gas emissions are generated solely from textile production. This tonnage is more than the combined emissions from all international flights and maritime shipping. Another environmental issue is that 20% of industrial water is used for dyeing and treating textiles (EMF, 2017). To address the adverse consequences of the current linear fashion economy, the circular

economy's "take-make-use-reuse" system is being touted by governments, business practitioners, and academic researchers as the key for replacing fashion's linear approach (Panwar & Niesten, 2020).

Being aware of the societal need for the fashion industry to move away from a linear to a circular economy (Moktadir et al., 2020; Stewart & Niero, 2018), the industry has recently made tremendous plans and implementation strategies so that the fashion-related economy can become more circular. In practice, circular fashion (CF) business strategies hinge on three principles (Ki et al., 2020). The first CF strategy is aimed at "designing out waste and pollution" during the production stage (EMF, 2017). One way to do this is through waterless dyeing. As an example, Nike has developed a "ColourDry" technology, which is an innovative process of dyeing clothes without water. While Nike previously wasted at least 30 liters of water to dye one t-shirt when using traditional dyeing methods, its new ColourDry technology eliminates the use of water from the dyeing process by using recycled carbon dioxide to infuse fabrics with intense and saturated colors (The Guardian, 2013). This new technology enables Nike to save water and eliminate the need for added chemicals in the dyeing process, which can be harmful to the environment. The second main business strategy is "keeping fashion products and their materials in longer and continuous use." The "Worn Wear" initiative of Patagonia, an American outdoor clothing company, is a good example. Patagonia launched its first online Worn Wear store in 2017 that sells repaired and refurbished Patagonia clothing (Wang & Shen, 2017). To extend this business, Patagonia recently opened its first brick and mortar Worn Wear store in 2019 exclusively centered on resale business. This new Worn Wear store operates by buying customers' Patagonia products back from them in exchange for store credit (Salpini, 2019). The third main CF business strategy stipulates that businesses use a strategy that seeks to "regenerate natural systems" (EMF, 2017). In practice, the fashion industry has been consuming a great number of unsustainable textiles, such as synthetic fibers (e.g., polyester),

which are not biodegradable and thereby have a direct influence on climate change. To tackle this side effect, the fashion business has been proactive in developing and using bio-fabricated textiles created by using living organisms (e.g., algae, bacteria, and fungi), which are mostly biodegradable and break down into nontoxic substances when they are buried (Palumbo, 2020). For instance, a Canadian-Iranian designer named Roya Aghighi unveiled a new line of clothing, Biogarmentry, which is made from algae that turns carbon dioxide into oxygen via photosynthesis.

Despite the fashion industry's efforts to institute a CF economy, this industry is still lagging behind in its acceptance of a truly circular economy. A recent research study that systematically reviewed the contents of all the CF literature collected from the Scopus and Web of Science databases between 2015 and 2019 (Ki et al., 2020) ascribes this lag to two causes. First, the lack of scalable CF research has hindered the fashion industry's ability to increase its adoption of a truly circular economy. Although academic research on CF has increased in the past five years, research on a circular economy focused on the fashion industry (59 articles) is not only far from saturated but largely exploratory in nature. The majority of the CF literature (71.2%) has focused on exploring fashion manufacturers' or fashion retailers' views or opinions about CF through interviews or case studies (Ki et al., 2020). Therefore, academic research that can provide empirical evidence on the relations between the perceptions, attitudes, and/or behaviors that were identified from these exploratory studies is needed to provide more practical insights for the development of CF business strategies. Second, the fashion industry faces complex challenges in instituting CF in that one supply chain member's (e.g., fashion retailer's) commitment is not sufficient to create a truly CF without consumers' engagement. However, to the best of our knowledge, none of the CF literature has yet investigated empirically whether fashion consumers morally support the ideas of CF and feel obliged to take part in fashion businesses' CF endeavors. Considering that the supply and

demand sides of the fashion economy are highly interdependent and require mutual support to tackle a state of affairs like sustainability (Prado-Lorenzo, Gallego-Alvarez, & Garcia-Sanchez, 2009), understanding how fashion corporations can build a truly circular system by sharing their CF business philosophy with consumers is essential.

This study's goals are to address the aforementioned gaps in the literature by investigating consumers' moral stance toward CF. More precisely, the study seeks to investigate whether consumers are morally grounded in the belief that they, as well as fashion corporations, are responsible for creating CF, and if so, specifically what moral stance (i.e., perfect moral responsibility vs. imperfect moral responsibility) do they take regarding corporations and themselves. This study also aims to investigate whether consumers' moral perceptions serve as critical factors affecting their attitudes and behavioral intentions toward fashion corporations' CF offerings. Gaining an understanding in this aspect is important because the creation of CF cannot be successful unless consumers are morally grounded in supporting the main principles of CF and motivated to engage in corporations' CF programs. Therefore, this study seeks to provide empirical evidence of the specific morally grounded traits and pathways that practitioners can use to motivate consumers to play an equally important role in the creation of CF.

2. THEORETICAL FRAMEWORK FOR RESEARCH QUESTIONS

The Moral Responsibility Theory of Corporate Sustainability (MRCS) (Ha-Brookshire, 2017) provided the conceptual lens for our study as it proposes the specific ways in which a corporation can perform truly sustainable actions together with its supply chain members (e.g., consumers). MRCS was developed to address how a company can perform genuinely sustainably so that the business world can make a truly positive impact on the environment and society. In response, the theory posits that the success of a company's sustainability performance most importantly depends on how it sees sustainability within the moral

responsibility spectrum: from “perfect” (i.e., absolute) to “imperfect” (i.e., meritorious), to “no” moral responsibility (Jung & Ha-Brookshire, 2017). MRCS also proposes that the key to a company’s success for increasing sustainability relies on two other factors: 1) its supply chain members’ moral stance toward sustainability (e.g., Do customers also share a moral responsibility for acting on sustainability?) and 2) its supply chain members’ perceived corporate hypocrisy (e.g., Do customers believe that there is a mismatch between what the company says and does, resulting in negative attitudes toward the company’s sustainability efforts?) (Ha-Brookshire, 2017). The three premises of MRCS are detailed below.

First, in our world in which sustainability is an increasingly important agenda, a company is required to take the same moral responsibility for the environment and society as do humans (Jung & Ha-Brookshire, 2017). Despite the growing demand for corporate moral responsibility, in practice, companies view sustainability from different moral perspectives. Some companies may see themselves as “perfectly (absolutely) responsible” for achieving sustainability, whereas other companies may project themselves as “imperfectly (meritoriously) responsible” or “not morally responsible at all” for increasing sustainability. From the MRCS’s perspective, “perfect moral responsibility” refers to a belief that companies are morally responsible for acting on sustainability at all times and in any circumstances (Ha-Brookshire, 2017). In contrast, “imperfect moral responsibility” refers to a belief that companies are not necessarily always morally responsible for sustainability, but it would be nice if they were (Jung & Ha-Brookshire, 2017).

Depending on which moral stance a company holds towards sustainability-related issues, its goals and strategies for corporate sustainability will differ (Lee, Ha-Brookshire, & Chow, 2018). For instance, the more companies perceive sustainability as their “perfect” moral duty, the higher their propensity for establishing strict sustainability goals and strategies (Ha-Brookshire, 2017). Strict and clear goals and strategies pertaining to sustainability will result

in well-defined corporate sustainability programs and practices that ultimately contribute to increasing the companies' "truly" sustainable performance. On the other hand, if a firm views sustainability as its "imperfect" moral duty, its sustainability goals and programs will vary periodically and result in "occasionally" sustainable performance (Jung & Ha-Brookshire, 2017). In this regard, the extent to which a company supports a truly sustainable performance depends on where the company perceives that sustainability lies along the moral responsibility spectrum: perfect vs. imperfect vs. no moral responsibility.

Second, a company may view sustainability as its "perfect" moral responsibility, but it still may not achieve a "truly" sustainable business unless its supply chain members regard sustainability as also being their same perfect moral duty. In this sense, MRCS posits that a firm's sustainable value creation relies on its supply chain members' moral stance (Ha-Brookshire, 2017). Indeed, in the fashion business, it is difficult to ensure a company's sustainability transparency and truly sustainable performance, despite its commitment toward increasing sustainability, because the fashion supply chain involves various members intertwined in the chain (e.g., suppliers, producers, and retailers) and the demand side of the value chain (e.g., consumers) (Varley, Roncha, Radclyffe-Thomas, & Gee, 2018). In particular, considering that sustainable fashion business seeks to extend the use period of fashion products or keep the products in the value chain by recycling or reusing them, fashion businesses cannot perform truly sustainable actions without customers' commitment to share the moral responsibility for creating sustainability (Ki et al., 2020). For instance, although a fashion corporation (e.g., H&M) takes sustainability as its perfect moral duty and implements a strict take-back program in all stores (i.e., an initiative to collect used clothing from consumers), the company cannot make its supply chain truly sustainable unless consumers accept the same perfect moral duty and return their unwanted clothes. Thus, a company's moral responsibility and that of its supply chain members—especially that of its customers—

mutually affect the company's sustainability performance overall (Ha-Brookshire, 2017; Niinimäki, 2018).

Third, when a firm's goals for moral responsibility do not match its actual practices, the mismatch will become apparent and its supply chain members (e.g., consumers) may perceive this discrepancy as hypocrisy (Ha-Brookshire, 2017), which is commonly defined as the belief that a company is claiming to be something that it is not (Wagner, Lutz, & Weitz, 2009). For example, although H&M claims that it promotes sustainability, the consumers might see that the company is still producing approximately 600 million fashion items annually, many of which end up in landfills (Christian, 2016). In this situation, some consumers may perceive that what H&M is claiming does not match its actions and thus the company is hypocritical. This perceived hypocrisy can develop negative attitudes toward the company and, in turn, could adversely affect the company's overall sustainability performance. Therefore, MRCS cites perceived corporate hypocrisy as another morally grounded trait affecting a company's sustainability performance (Ha-Brookshire, 2017).

Because MRCS provides a holistic view of the way a company's sustainability performance interacts with its supply chain members, MRCS has been applied in diverse supply-chain and sustainability contexts. For example, Lee et al. (2018) applied MRCS to assess if the fashion retail employees in the U.S. and China perceived their moral responsibility for corporate sustainability similarly or differently for various sustainability-related activities. On the other hand, Jung and Ha-Brookshire (2017) applied MRCS to understand consumers' views on corporate sustainability from the moral responsibility perspective. They identified which sustainability-related business activities are perceived by consumers as the activities that require the corporations' perfect moral responsibility (e.g., working condition support and environmental support). They also noted which activities that the corporations can engage in

as their imperfect moral responsibility (e.g., community support and transparency enhancement).

Although MRCS has been applied in diverse corporate sustainability contexts, surprisingly, no research to date has applied MRCS to the CF context. Given that MRCS can account for sustainability-related topics (i.e., CF) and for the fashion businesses' interdependent relations with their supply chain members, this study employs MRCS to understand whether consumers believe that they and fashion corporations are both morally obliged to making fashion circular. Specifically, this study aims to address the following:

- **Research question 1:** Do consumers perceive that they, as well as fashion corporations, are morally responsible for creating CF? If so, what moral stance (i.e., perfect vs. imperfect moral responsibility) do they project toward the corporations and themselves, and how do these moral stances interplay?
- **Research question 2:** Do consumers perceive that fashion corporations are hypocritical, which happens when consumers see a mismatch between what the corporations say and do with respect to CF?
- **Research question 3:** Do these morally grounded traits (i.e., perceived corporate moral responsibility, consumer moral responsibility, and corporate hypocrisy) serve as critical factors affecting consumers' attitudes and behavioral intentions toward fashion corporations' CF efforts?

To address these three research questions, we reviewed extant literature and generated a set of hypotheses in the following section.

3. HYPOTHESES DEVELOPMENT

3.1. Consumers' Perceived Moral Responsibilities on Attitude

Perceived corporate moral responsibility on consumers' attitude. The literature defines attitude as an individual's psychological tendency to evaluate a person, product, or service (i.e., an attitude entity) with some degree of favor or disfavor (Eagly & Chaiken, 1993). Whether an individual shapes a positive or negative attitude toward an attitude entity is affected by distinct factors that depend on the context in which he or she is situated. In the

sustainability context, individuals shape their attitude toward a sustainable products or services based on their moral beliefs (Watkins, Aitken, & Mather, 2016). For example, Vahdati, Mousavi, and Tajik (2015) showed that the more consumers saw that a company was taking the moral responsibility for performing in a sustainable way, the consumers' propensity to value the company and its sustainable offerings was higher. Castaldo, Perrini, Misani, and Tencati (2009) also indicated that when consumers believed in corporate social responsibility and perceived that a company was implementing strict standards and necessary actions to meet its responsibility, such as fair trade, consumers showed a strong positive attitude, such as trust, in the company's fair-trade products. We thus posit that the more consumers believe that it is fashion companies' absolutely must-do (perfect) moral duty to make fashion circular, the more likely they will develop positive attitudes towards the companies' CF efforts. This leads us to:

H1: The more consumers believe that fashion corporations have a perfect (vs. imperfect vs. no) moral responsibility for creating CF, the more positively consumers shape their attitudes toward fashion corporations' CF offerings (e.g., take-back programs).

Perceived consumers' moral responsibility for their attitude. As much as individuals' beliefs about corporate moral responsibility influences their attitudes toward the company's sustainable offerings, their own moral responsibility plays an equally important role in shaping their attitude. Indeed, the literature indicates that environmental attitudes regarding everyday consumer behavior are morally based. For example, Gule, Maduku, Delener, and Schweikert (2017) showed that the more people believed that it is their moral duty to protect the environment, the more positively they evaluated green products, such as items made of eco-friendly production or items with green labeling. Likewise, when consumers felt morally obligated to care for the environment and minimize the use of natural resources, the propensity for them to show positive attitudes toward the concept of recycling and companies'

recycled products was higher (Chen & Chai, 2010). Verma, Chandra, and Kumar (2019) also showed that the more that consumers felt they had a mutual responsibility with the hotel operators for the negative consequences caused by the hotel industry, the more likely they were to show favorable attitudes toward staying at green hotels that operated on sustainable initiatives. We thus posit that the extent to which consumers believe that it is their must-do (perfect) moral responsibility to create CF will positively affect their attitude towards fashion companies' CF offerings. This leads us to:

H2: The more consumers believe that they, as fashion consumers, have a perfect (vs. imperfect vs. no) moral responsibility for creating CF, the more positively they will shape their attitudes toward fashion corporations' CF offerings (e.g., take-back programs).

3.2. Interaction Effects of Perceived Corporate and Consumer Moral Responsibilities on Consumers' Attitude

In addition to identifying the main effects of corporate and consumer moral responsibilities on consumers' attitudes, we propose the need to investigate their interaction effect. Indeed, the identification of a truly circular material loop system requires a combination of supply-and-demand-side measures (EMF, 2017). For example, a fashion corporation can show high CF indicators by making a strong commitment to implementing take-back programs, but the corporation's CF impacts may not be successful enough if consumers show low CF indicators on their end (e.g., do not feel the strong necessity to return their used products back to stores for recycling). Thus it is important to understand whether and how the supply and demand sides of a fashion company's activities influence one another and affect the company's overall CF performance (Seuring & Müller, 2008). To provide insights into this aspect, we posit that the effect of perceived corporate moral responsibility on consumers' attitude toward fashion corporations' CF offerings would differ depending on their beliefs on their own moral responsibility. While predicting that consumer moral

responsibility will moderate the relation between corporate moral responsibility and consumer attitude, we leave its specific effects empirically identified. This leads us to:

H3: Consumers' beliefs toward corporate moral responsibility and their own moral responsibility for creating CF have an interaction effect on their attitude toward fashion corporations' CF offerings (e.g., take-back programs).

3.3. Consumers' Perceived Corporate Hypocrisy on Attitude

We suggest that corporate hypocrisy is another morally grounded trait affecting consumers' attitudes toward fashion corporations' CF offerings, yet in a negative way. The literature indicates that corporate hypocrisy has an adverse effect on company evaluations. For example, when consumers perceive a mismatch between what a company says and how it actually performs, the discrepancy leads to perceived corporate hypocrisy, decreasing consumers' positive attitudes toward and trust in the company (Wagner et al., 2009). In a similar vein, when a company claims to be good when it is not, consumers voice negative opinions and criticisms about the company (Shim & Kim, 2017). To make it worse, the negative sentiment associated with a company often spills over to the company's offerings, creating negative consumer attitudes toward the company's products, services, and even its marketing endeavors (Skarmeas & Leonidou, 2013). On the other hand, Alhouti, Johnson, and Holloway (2016) show that the less consumers perceive the gap between what a company says and what it does, the more they perceive the company to be authentic, shaping positive consumer attitudes toward the company's communication message and offerings. We thus posit that the extent to which consumers perceive a discrepancy between fashion companies' missions and the companies' actual performances concerning CF will negatively influence consumers' attitudes toward the companies' CF offerings. This leads us to:

H4: The more consumers perceive that fashion corporations are hypocritical in terms of what they say and do about CF, the more negatively they shape their attitudes toward fashion corporations' CF offerings (e.g., take-back programs).

3.4. Consumers' Attitude on Behavioral Intention

Lastly, we suggest that consumers' positive attitudes translate into their favorable behavioral intention. Previous research has shown the significant effect that consumers' attitudes have on their behavioral intention across a range of distinct product and service contexts (Kim & Chung, 2011). For example, Park and Ha (2012) indicated that the more consumers evaluate recycling to be a good, wise, and favorable thing to do, the more they exhibit greater engagement intention toward recycling. Engagement refers to a cognitive and affective commitment to do something (Mollen & Wilson, 2010). The same effect was identified in the context of sustainable services. According to Verma et al. (2019), the more consumers evaluate green hotels as good and favorable, the more likely they will show an intention to visit and stay at green hotels. We thus posit that the more positively (vs. negatively) consumers show their attitudes toward fashion companies' CF offerings, the propensity for them to engage in the corporate CF programs will increase (vs. decrease). This leads us to:

H5: The more positively (vs. negatively) consumers evaluate companies' CF offerings, the more (vs. less) they intend to take part in the companies' CF offerings (e.g., take-back programs).

Figure 1 shows the pictorial illustration of our research model and hypotheses.

----- Figure 1 about here -----

4. METHODS

We developed an online survey questionnaire and administrated it through Dynata, a survey company with a global consumer panel. When developing the questionnaire, we chose the survey context to determine consumers' moral stance about, attitudes toward, and engagement in, fashion corporations' "take-back programs" for two reasons: (1) Fashion companies are increasingly taking post-retail responsibility to achieve their prime CF goals (e.g., material recycling) through their take-back programs, and (2) a take-back program is the most significant platform from which to address consumers' post-consumption behavior (Leal Filho et al., 2019). Thus, the take-back program was deemed appropriate for asking about

individuals' attitudes toward, and behavioral intention to engage in, fashion corporations' CF offerings.

The survey questionnaire consisted of three sections. In the first section, we provided the definitions and examples of a circular economy, CF, and take-back programs. To ensure that the questionnaire was filled out by the respondents who were familiar with our study's context, respondents were asked to answer two multiple-choice screening questions (see the Appendix): "What system does a circular economy endorse?" and "Which of the following is/are example of fashion companies' circular economy initiatives?" Only those who gave correct answers to these questions were able to access the rest of the survey. In the second section, the respondents were asked to indicate their moral stance toward the key principles of CF, both with respect to *corporate moral responsibility* (CorpMR) and *consumer moral responsibility* (ConsMR). They were also asked to rate their perceptions on *corporate hypocrisy* (CorpHY) with respect to CF, as well as their attitudes and behavioral intention toward fashion corporations' take-back programs. In the last section of the questionnaire, we included questions about the respondents' demographic information.

Measurement items in the second section of the questionnaire were developed based on previously validated scales. The items for *CorpMR* were adapted from Green Strategy (2015) and Zhu, Geng, and Lai (2010), and items for *ConsMR* were adapted from Green Strategy (2015) and McLaren et al. (2017). To ensure that we were operationalizing consumers' moral beliefs from the MRCS's perspective, we followed the response options of Jung and Ha-Brookshire (2017) and measured the items of *CorpMR* and *ConsMR* on a 5-point Likert-type scale from "absolutely no need to do in any circumstances (no duty)" (1), "not necessarily a must-do, but would be a nice thing if they do (imperfect duty)" (3), to "absolutely must do in any circumstances (perfect duty)" (5). On the other hand, the items for *CorpHY* were adapted from Wagner et al. (2009); *consumer attitude* from Taylor and Todd (1995); and *engagement*

intention from Lin (2006). For these items, the respondents were asked to rate their perceptions on a 5-point Likert-type scale from “*strongly disagree*” (1) to “*strongly agree*” (5).

The online survey was distributed to general consumers who resided in the U.S. and were older than 18 in November 2019. Within a week of data collection, 368 responses were completed. After excluding 17 responses due to incomplete data, 351 usable responses remained for data analysis. The majority of our respondents (61.8%) were female, Caucasian (80.6%), older than 45 (54.13%), and married (55.3%). About 45.3% worked full time, and about 35% had a bachelor’s degree. In addition, 30.2% had an annual household income of \$31,000–\$62,999.

5. RESULTS

5.1. Measurement Model

With the collected data, we tested our measurement model using a confirmatory factor analysis. The results indicated that our measurement model has a good fit: $\chi^2_{199} = 393.604$, CFI = .96, TLI = .95, NFI = .92, RMSEA = .05. We then tested our instrument’s convergent validity. As shown in Table 1, all factor loadings were between .51 and .92 (>.50 threshold) and the composite reliabilities of all constructs ranged from .77 to .92 (> .70 threshold). The average variance extracted (AVE) for each construct ranged from .53 to .80 (> .50 threshold), except for ConsMR. However, this was deemed non-problematic because the composite reliability of ConsMR showed higher than the .60 threshold (Fornell & Larcker, 1981). We also tested our instrument’s discriminant validity. As shown in Table 2, the square roots of AVEs were larger than the corresponding correlation coefficients between factors, except for that between CorpMR and ConsMR. Yet, this was not problematic because the correlation between CorpMR and ConsMR was below the .85 threshold (Kenny, 2012).

----- Tables 1 and 2 about here -----

5.2. Structural Model

Next, we tested our research model and hypotheses using structural equation modeling (SEM). Our structural model fit was also satisfactory: $\chi^2_{220} = 452.86$, CFI = .95, TLI = .94, NFI = .90, RMSEA = .06. Our results further showed that all the hypotheses were supported. As shown in Table 3, both CorpMR (H1: $\beta = .48$, $p < .01$) and ConsMR (H2: $\beta = .20$, $p < .10$) positively affected consumers' attitudes. Yet, their interaction effect (H3: $\beta = -.09$, $p < .10$) and the effect of CorpHY (H4: $\beta = -.12$, $p < .05$) on consumers' attitudes were negative. Consumers' attitudes (H5: $\beta = .86$, $p < .01$) had a positive effect on engagement intention.

----- Table 3 about here -----

5.3. Robustness Test via Ordered Probit Model

We analyzed our hypotheses further using the ordered probit model. We tested the robustness of our model via the ordered probit model for two main reasons. First, when survey questions are modeled to rank respondents' level of agreement on a 5-point Likert-type scale which is naturally ordered, the variables should not be treated as cardinal, but ordinal, because the values of ordered response variables are rather arbitrary. However, estimating ordinal variables using linear regression violates the linear regression model's fundamental assumption (i.e., the error term's normality), which results in a biased estimator (Winship and Mare, 1984). To avoid these drawbacks, we employed the probit version of the ordinal regression model to reflect the ordinal ranking of our 5-point-Likert scale responses. Second, when a questionnaire includes respondents' demographic information, omitting these observed variables in the analysis leads to biased parameter estimates and larger errors. While SEM does not estimate hypotheses with observed variables included, because it requires all variables to be latent, the ordered probit model can estimate equations that involve both latent and observed variables. We thus tested our hypotheses by using the ordered probit model (McKelvey & Zavoina, 1975). The equations of the ordered probit model used in our study are presented in Table 4. In the

equations, we included gender, age, ethnicity, marital status, education level, employment status, and household income as control variables.

----- Table 4 about here -----

Before analyzing the hypotheses, we estimated the means, standard deviations, and correlations of our quantitative variables. As shown in Table 5, the results indicated that respondents believed fashion corporations ($M = 3.83$; $SD = .74$) should bear more perfect (vs. imperfect or no) moral responsibility than consumers ($M = 3.51$; $SD = .68$). To test whether they projected a different moral stance toward CorpMR and ConsMR, we performed paired sample t-test. As shown in Table 6, the results confirmed that the two conditions' means are statistically different ($\Delta = 0.32$; $p < .01$).

----- Table 5 and 6 about here -----

After these preliminary analyses, we tested the causalities of our hypotheses via the ordered probit model (see Table 7). The results confirmed the positive main effects of CorpMR ($H1: \beta = .68, p < .01$) and ConsMR ($H2: \beta = .30, p < .01$) on consumers' attitudes, and the negative interaction effect ($H3: \beta = -.10, p < .05$) on their attitudes. The negative effect of CorpHY ($H4: \beta = -.19, p < .05$) on consumers' attitudes and the positive effect of those attitudes ($H5: \beta = 1.38, p < .01$) on engagement intention were confirmed through the ordered probit model. In particular, the interaction effect as shown in Figure 2 provides a more nuanced result. The result showed that increased ConsMR weakened the positive association between CorpMR and consumers' attitudes. In other words, the positive effect of CorpMR on consumers' attitudes was stronger in low ConsMR group than in high ConsMR group.

----- Table 7 and Figure 2 about here -----

The ordered probit model results also provide additional findings as some control variables were found significant. Although the meaning of these results can only be fully understood through future research, we found that gender, ethnicity, and marital status served

as significant control variables in some hypotheses. For example, the positive effect of consumers' attitudes on engagement intention was stronger for females than for males, and for African-American than for others. Furthermore, the effects of our hypotheses were significantly weaker for married respondents than those who are divorced, except for H3 and H5. On the other hand, age, education, employment, and household income had no significant control effects on our hypothesized relations.

6. DISCUSSIONS

Despite the strong societal need urging fashion business responses to move away from a linear economy in favor of circular economy, as of now, no empirical research informs how fashion business practitioners can create truly CF together with their customers. This study addressed this issue by investigating CF from customers' moral point of view. Grounded in MRCS, our findings provide empirical evidence showing that three morally grounded traits perceived by consumers—perceived corporate moral responsibility, perceived consumer moral responsibility, and perceived corporate hypocrisy—are particularly worthy of note in motivating them to take part in fashion businesses' CF offerings, so as to create a truly CF business. The study's findings provide some guidance for business practitioners seeking to develop competitive strategies in terms of CF and contribute to sustainable development. Further details about our study's implications are described below.

6.1. Theoretical and Managerial Implications

Our research contributes to the circular fashion literature and the business strategy and corporate environmental management literature in several respects. First, our research contributes to the literature by attesting to whether consumers associate CF as a moral issue. While the literature on CF has focused predominantly on identifying how fashion business can embrace circular economy, e.g., by exploring the drivers, strategies, practices, barriers, or enablers in the business's adoption and implementation of CF (Ki et al., 2020; Stewart & Niero,

2018), less is understood about CF from customers' point of view. Thus, our research drew attention to this customer viewpoint of CF from the MRCS's moral responsibility perspective. The results of our study clearly show that consumers do take a moral stance on CF within the moral spectrum that ranges from "perfect" (i.e., absolute) to "imperfect" (i.e., meritorious) to "no" moral responsibility. Specifically, the mean value of consumers' "perceived corporate moral responsibility" and "their own moral responsibilities as consumers" ($M=3.67$; $SD=.66$) was shown to range between 3 and 4. This indicates that consumers believe it is morally desirable for both the supply and demand sides of the fashion economy to bear CF as their "imperfect" moral duties (3 within the 5-point Likert type scale) that are leaning towards "perfect" moral duties (5 within the scale), rather than "no" moral duties (1 within the scale). Thus, this study is, to the best of our knowledge, the first to indicate empirically that consumers do project a moral stance when it comes to CF principles.

Second, our study provides further insights to the literature in this aspect. While both corporations' and consumers' moral duties leaned towards "imperfect" duties in consumers' moral spectrum, our results show that there is a slight, yet significant, difference in between the corporate and consumer moral responsibilities for CF ($\Delta=0.32$; $p<.01$). That is, consumers believed that fashion corporations ($M=3.83$; $SD=.74$) should take a relatively more "perfect" moral duty stance for CF than individual consumers should ($M=3.51$; $SD=.68$), which we find particularly interesting and important to note. These findings imply that consumers are expecting to see fashion business practitioners take more perfect moral responsibility for the products they make even before and after they are sold, than the moral responsibilities that individual consumers need to bear. Employing this moral stance on fashion business strategies may help enhance the effectiveness of fashion stakeholders' CF endeavors and make them influential leaders of promoting this new economy in fashion business.

Third, our study provides additional implications to the literature by showing that consumers' "perceived corporate moral responsibility" is a critical precedent affecting their attitude toward the corporations' CF offerings—even if it is something that consumers see as the corporation's "imperfect" duty. Our results indicate that the more consumers believe that fashion corporations should take "perfect" (vs. "imperfect" vs. "no") moral responsibility toward CF, the more they develop favorable attitudes toward fashion corporations' CF offerings. This implies that consumers do not necessarily believe that corporations should take "perfect" moral responsibility for CF. However, the more corporations communicate about bearing perfect CF duties at all times and circumstances, the more consumers would see their endeavors and show support toward their CF missions. Thus, fashion business practitioners can benefit by developing marketing strategies that feature how perfectly they are making efforts to follow strict standards to use biodegradable materials, or keep strict production manuals to make fashion items through reclaiming recycled materials instead of using new virgin materials. This way, consumers perceive companies' absolute commitment toward CF, which helps them develop positive attitudes toward corporations' CF offerings.

Our research also shows that individuals' own sense of "consumer moral responsibility" plays an equally critical role in shaping positive attitudes toward corporate CF offerings. The results of our study clearly show that the more consumers believe that it is their "perfect" (vs. "imperfect" vs. "no") moral responsibility to choose and buy CF items, the propensity for them to develop positive attitudes toward corporate CF offerings is higher. This implies that business practitioners wishing to derive favorable consumer attitudes toward their CF missions would benefit by arousing consumers' own moral responsibility. For example, instituting marketing campaigns that disclose the ecological footprint measures before and after consumers buy fashion items made with recycled materials, or before and after they return worn-out fashion items to retail stores, could be effective. In this way, consumers can be awakened to the moral

responsibility they have on the demand side, which would ultimately affect fashion corporations' CF endeavors positively.

Most importantly, our research provides new insights to the literature by showing that corporate and consumer moral responsibilities interact and simultaneously affect consumers' attitudes toward corporate CF offerings. Specifically, our results indicate that increased consumer moral responsibility for CF weakens the positive relation between corporate moral responsibility and consumers' attitudes. That is, the effect of corporate moral responsibility on consumers' attitudes is more significant among individuals who show "low" consumer moral responsibility (i.e., towards "no" moral duty) than those who show "high" consumer moral responsibility (i.e., towards "perfect" moral duty). Therefore, it is important to assess both the supply and demand sides of fashion business to understand the business model's true impact on CF. This would further infer that fashion business practitioners can enhance the effectiveness of their CF business strategies even among consumers who believe it is not their personal moral responsibility to create CF, if they successfully showcase their high (perfect) corporate responsibility for CF to the consumers. This again underscores the importance of the effect corporate moral responsibility has on consumer attitudes toward corporate CF initiatives and strategies (e.g., take-back program).

Further to these moral beliefs, this study provides significant implications for business strategies by attesting "perceived corporate hypocrisy" as another morally grounded trait that significantly affects consumers' attitudes in terms of CF. Perceived corporate hypocrisy is a negative morally rooted feeling that emerges when consumers feel a discrepancy in that fashion companies are pretending to be circular, when they are actually not. Our results indicate that consumers perceive fashion corporations as quite hypocrite ($M = 3.25$; $SD = .72$) with respect to what they say and do in terms of CF. Our results further show that the more consumers perceive a discrepancy between what companies say in terms of CF and what they really do, the more

likely they perceive the companies to be hypocrite, thus forming a negative attitude toward the companies' CF offerings. This implies that fashion companies' CF missions must be communicated with caution, as they can rather backfire the company's CF performance if its operations do not match the mission statements. For example, although fashion corporations "say" that they are taking CF as their absolutely must-do duties, if consumers "see" that they are still operating in a non-circular way (e.g., by producing excessive amount of fast-fashion items into the market), it would rather result in negative consumer attitude toward fashion corporations' CF initiatives and strategies. Thus, companies should not just pretend to create CF, but show tangible actions that can be proven to their consumers.

Lastly, our findings indicate that the more consumers shape positive (vs. negative) attitude toward fashion companies' CF offerings, the more (vs. less) they show the intention to engage in the companies' CF endeavors. Noting on the moral factors that influence consumers' attitudes—from perceived corporate moral responsibility (+), consumer moral responsibility (+), and corporate hypocrisy (-)—business practitioners can design effective CF business strategies to encourage consumers to take part in their CF offerings. In this way, we believe that the fashion business can successfully co-create CF across its value chain and enhance its impact on sustainable development.

6.2. Limitations

Our results should be generalized with caution. First, we tested our model in the context of corporate take-back programs, one of the key CF programs in which consumers can easily participate. Given the increasing trends in fashion leasing or reusing, in addition to encouraging recycling, the results would be different if respondents were asked to share their experiences in other CF business models. An interesting extension of our study would be to examine whether our model holds true across various CF business models. Second, our data were based on respondents residing in the U.S. with more female than male respondents. Therefore, the

generalization of the study finding to overall U.S. consumers must not be done. Third, it will be interesting to distribute our survey among consumers in other national contexts and conduct a cross-cultural study to see if our results hold true or differ. Particularly, the comparisons between collectivist and individual societies would be worthwhile, given the CF focuses on the betterment of the collective society and environments. Finally, the findings are time and context sensitive. Given that circular economy is still a newer concept for U.S. consumers, they might still think CF is an imperfect duty for both fashion companies and consumers. If the societal and environmental problems increase (or decrease), their views on CF might change. The U.S. is also a developed economy, and therefore, U.S. consumers might be more concerned with textile wastes or CF initiatives in general. Thus the views of consumers in developing economies would be important to investigate for overall efforts toward CF.

Table 1. *Measured Model Assessment*

Construct	Factor loading	AVE	CR
Measured on a 5-point Likert-type scale from “ <i>absolutely no need to do in any circumstances</i> ” (no moral responsibility) (1), “ <i>not necessarily a must-do, but would be a nice thing if they do</i> ” (imperfect moral responsibility) (3) to “ <i>absolutely must do in any circumstances</i> ” (perfect moral responsibility) (5).			
Corporate moral responsibility for CF		.56	.88
<i>I believe that fashion companies should...</i>			
offer fashion items produced with non-toxic, compostable materials.	.72		
offer fashion items produced with biodegradable materials.	.79		
offer fashion items produced to minimize waste.	.80		
offer fashion items produced with minimized extraction of new virgin material	.77		
offer fashion items produced through reclaiming and reusing potential spills as raw material.	.75		
offer fashion items produced using renewable energy (e.g., wind or solar power).	.65		
Consumer moral responsibility for CF		.44	.84
<i>As a fashion consumer, I believe that I should...</i>			
buy fashion items made with recycled materials rather than new, virgin materials.	.74		
buy fashion items that can be repaired easily to maximize the use of the product.	.68		
buy fashion items that can be easily redesigned by myself to maximize the use of the materials involved.	.64		
buy easily-disassembled fashion items that facilitate effective reuse or recycling of their materials.	.75		
buy second-hand fashion items rather than new items.	.58		
donate fashion items I no longer use to friends or relatives who can use them.	.52		
donate worn-out or irreparable fashion items to a recycling station as raw material (or component) inputs for new fashion items.	.68		
Measured on a 5-point Likert-type scale from “ <i>strongly disagree</i> ” (1) to “ <i>strongly agree</i> ” (5)			
Corporate hypocrisy		.53	.77
The behaviors of fashion companies who have a circular economy mission often conflict with their mission statements.	.51		
What fashion companies with a circular economy mission “say” about their commitment to circular fashion and what they really “do” are two different things.	.80		
Fashion companies with a circular economy mission pretend to be circular, but they are not.	.84		
Consumers’ attitudes		.74	.90
I like the idea of returning my old, used, or unwanted fashion items to stores for fashion companies to recycle.	.85		
I like the idea of fashion companies accepting returned fashion items that customers no longer wear to their stores.	.88		
Dropping off my old, used, or unwanted fashion items in stores for fashion companies to recycle them into new fabrics or new fashion items is a good idea.	.86		
Consumers’ engagement intention		.80	.92
I am likely to participate in fashion companies’ take-back programs in the future.	.86		
The likelihood I would engage in fashion companies’ take-back (recycle) programs (bins) is high.	.92		
I would be willing to return my old, used, or unwanted clothes to fashion companies’ take-back programs in the future.	.91		

Table 2. *Discriminant Validity Assessment*

Variable of interest	1	2	3	4	5
1. Corporate moral responsibility	.75^a				
2. Consumer moral responsibility	.83	.66^a			
3. Corporate hypocrisy	.11	.18	.73^a		
4. Consumer attitude	.63	.55	-.04	.86^a	
5. Engagement intention	.57	.58	-.02	.86	.89^a

Note: ^a Square root of average variance extracted (AVE) value for each construct

Table 3. *Hypotheses Test Results using SEM*

Hypothesis	Structural path	β	<i>t</i> -value	Result
H1	Corporate moral responsibility → Consumer attitude	.48***	3.77	Supported
H2	Consumer moral responsibility → Consumer attitude	.20*	1.95	Supported
H3	Interaction effect → Consumer attitude	-.09*	-1.93	Supported
H4	Corporate hypocrisy → Consumer attitude	-.12**	-2.22	Supported
H5	Consumer attitude → Engagement intention	.86***	16.45	Supported

Note: * $p < .10$ ** $p < .05$ *** $p < .01$.

Table 4. *Equations of the Ordered Probit Models*

Regression	Hypothesis	Equations: Dependent variable = Independent and control variables
Ordered probit	H1 & H2	$ATT_i = \beta_0 + \beta_1 CorpMR_i + \beta_2 ConsMR_i + \beta_3 FEM_i + \beta_4 OTHER1_i + \beta_5 NS_i +$ $\beta_6 AGE_i + \beta_7 AA_i + \beta_8 CAU_i + \beta_9 NA_i + \beta_{10} API_i + \beta_{11} HIS_i + \beta_{12} SG_i + \beta_{13} DP_i + \beta_{14} MAR_i$ $\beta_{15} OTHER2_i + \beta_{16} EDU_i + \beta_{17} WFT_i + \beta_{18} WPT_i + \beta_{19} WMPT_i + \beta_{20} INC_i + \varepsilon_i$
	H3	$ATT_i = \beta_0 + \beta_1 CorpMR_i + \beta_2 ConsMR_i + \beta_3 INTER_i + \beta_4 FEM_i + \beta_5 OTHER1_i + \beta_6 NS_i$ $\beta_7 AGE_i + \beta_8 AA_i + \beta_9 CAU_i + \beta_{10} NA_i + \beta_{11} API_i + \beta_{12} HIS_i + \beta_{13} SG_i + \beta_{14} DP_i + \beta_{15} MAR_i +$ $\beta_{16} OTHER2_i + \beta_{17} EDU_i + \beta_{18} WFT_i + \beta_{19} WPT_i + \beta_{20} WMPT_i + \beta_{21} INC_i + \xi_i$
	H4	$ATT_i = \beta_0 + \beta_1 CorpMR_i + \beta_2 ConsMR_i + \beta_3 CorpHY_i + \beta_4 FEM_i + \beta_5 OTHER1_i + \beta_6 NS_i$ $\beta_7 AGE_i + \beta_8 AA_i + \beta_9 CAU_i + \beta_{10} NA_i + \beta_{11} API_i + \beta_{12} HIS_i + \beta_{13} SG_i + \beta_{14} DP_i + \beta_{15} MAR_i +$ $\beta_{16} OTHER2_i + \beta_{17} EDU_i + \beta_{18} WFT_i + \beta_{19} WPT_i + \beta_{20} WMPT_i + \beta_{21} INC_i + \eta_i$
	H5	$ENG_i = \beta_0 + \beta_1 ATT_i + \beta_2 FEM_i + \beta_3 OTHER1_i + \beta_4 NS_i + \beta_5 AGE_i + \beta_6 AA_i + \beta_7 CAU_i$ $\beta_8 NA_i + \beta_9 API_i + \beta_{10} HIS_i + \beta_{11} SG_i + \beta_{12} DP_i + \beta_{13} MAR_i + \beta_{14} OTHER2_i + \beta_{15} EDU_i +$ $+ \beta_{16} WFT_i + \beta_{17} WPT_i + \beta_{18} WMPT_i + \beta_{19} INC_i + \zeta_i$

Notes:

1. Dependent variables: ATT (Consumer attitude); ENG (Engagement intent)
2. Independent variables: CorpMR (Corporate moral responsibility); ConsMR (Consumer moral responsibility); INTER (Interaction effect: CorpMR×ConsMR); and CorpHY (Corporate hypocrisy)
3. Control variables: FEM (=1 if Female, 0 otherwise); OTHER1(=1 if Other, 0 otherwise); NS (=1 if Rather not say, 0 otherwise); AGE; AA (=1 if African-American, 0 otherwise); CAU (=1 if Caucasian, 0 otherwise); NA (=1 if Native American, 0 otherwise); API (=1 if Asian or Pacific Islander, 0 otherwise); HIS (=1 if Hispanic, 0 otherwise); SG (= 1 if Single, 0 otherwise); DP (=1 if Domestic partnership, 0 otherwise); MAR(=1 if Married, 0 otherwise); OTHER2(=1 if Other, 0 otherwise); EDU (Education level); WFT (=1 if Work full-time, 0 otherwise); WPT (=1 if Work part-time, 0 otherwise); WMPT (=1 if Work multiple part-time, 0 otherwise); and INC (Household income)

Table 5. *Correlation Matrix*

Quantitative variables	Mean	S.D.	1.	2.	3.	4.	5.	6	7	8
1. CorpMR	3.83	0.74	1.00							
2. ConsMR	3.51	0.68	0.72***	1.00						
3. CorpHY	3.25	0.72	0.12**	0.20***	1.00					
4. ATT	4.30	0.81	0.55***	0.48***	-0.01	1.00				
5. ENG	4.08	0.95	0.51***	0.49***	0.01	0.77***	1.00			
6. AGE	47.28	14.50	-0.00	-0.03	-0.07	-0.00	-0.03	1.00		
7. EDU	2.63	1.00	-0.00	-0.06	0.10*	0.01	0.03	0.11**	1.00	
8. INC	2.63	1.10	-0.04	-0.09*	0.03	-0.05	-0.02	0.19***	0.49***	1.00
Categorical variables	Proportion	S.E.								
FEM	0.62	0.03								
AA	0.06	0.01								
CAU	0.81	0.02								
NA	0.00	0.00								
API	0.05	0.01								
HIS	0.06	0.01								
MAR	0.55	0.03								
SG	0.25	0.02								
DP	0.06	0.01								
DV	0.13	0.02								
WFT	0.45	0.03								
WPT	0.15	0.02								
WMPT	0.01	0.01								

Notes:

1. * $p < .10$ ** $p < .05$ *** $p < .01$.
2. Quantitative variables: CorpMR (Corporate moral responsibility); ConsMR (Consumer moral responsibility); CorpHY (Corporate hypocrisy); ATT (Consumer attitude); ENG (Consumer engagement intent); EDU (Education level); and INC (Household Income)
3. Categorical control variables: FEM (=1 if Female, 0 otherwise); AA (=1 if African-American, 0 otherwise); CAU (=1 if Caucasian, 0 otherwise); NA (=1 if Native American, 0 otherwise); API (=1 if Asian or Pacific Islander, 0 otherwise); HIS (=1 if Hispanic, 0 otherwise); MAR (=1 if Married, 0 otherwise); SG (= 1 if Single, 0 otherwise); DP (=1 if Domestic partnership, 0 otherwise); DV (Divorced); WFT (=1 if Work full-time, 0 otherwise); WPT (=1 if Work part-time, 0 otherwise); and WMPT (=1 if Work multiple part-time, 0 otherwise).

Table 7. *Robustness Test Results using the Ordered Probit Model*

Variables	Dependant variables: Consumer attitude			Engagement
	H1 & H2	H3	H4	H5
<i>Independent variables</i>				
Corporate moral responsibility	0.68*** (0.10)	0.41*** (0.08)	0.67*** (0.11)	-
Consumer moral responsibility	0.30*** (0.11)	0.20** (0.08)	0.35*** (0.11)	-
Interaction effect	-	-0.10** (0.05)	-	-
Corporate hypocrisy	-	-	-0.19** (0.09)	-
Consumer attitude	-	-	-	1.38*** (0.10)
<i>Control variables</i>				
Gender (ref = male)				
Female	-0.01 (0.14)	0.00 (0.08)	-0.03 (0.14)	0.26* (0.14)
Other1	3.55 (145.06)	0.21 (0.73)	3.39 (141.87)	4.24 (139.17)
Rather not say	-0.68 (1.10)	-0.31 (0.72)	-0.72 (1.10)	0.48 (1.12)
Age	-0.00 (0.01)	-0.00 (0.00)	-0.00 (0.01)	-0.00 (0.01)
Ethnicity (ref = others)				
African-American	-0.22 (0.49)	-0.26 (0.30)	-0.23 (0.50)	1.02** (0.50)
Caucasian	-0.07 (0.42)	-0.09 (0.26)	-0.03 (0.42)	0.21 (0.41)
Native American	4.19 (145.06)	0.60 (0.76)	4.13 (141.87)	4.45 (139.17)
Asian or Pacific Islander	-0.63 (0.50)	-0.36 (0.31)	-0.54 (0.51)	0.35 (0.50)
Hispanic	-0.56 (0.49)	-0.40 (0.30)	-0.51 (0.49)	0.39 (0.47)
Marital status (ref = divorced)				
Single	-0.46* (0.24)	-0.25* (0.14)	-0.47* (0.24)	-0.21 (0.24)
Domestic partnership	-0.19 (0.34)	-0.12 (0.19)	-0.19 (0.35)	-0.69** (0.31)
Married	-0.37* (0.22)	-0.18 (0.12)	-0.38* (0.22)	-0.21 (0.21)
Other2	-1.13 (1.11)	-0.64 (0.72)	-1.17 (1.11)	5.42 (139.17)
Education	0.09 (0.08)	0.04 (0.04)	0.10 (0.08)	0.04 (0.07)
Employment (ref = do not work)				
Full-time	0.00 (0.16)	-0.01 (0.10)	-0.01 (0.16)	0.04 (0.16)
Part-time	-0.12 (0.20)	-0.09 (0.12)	-0.12 (0.20)	0.21 (0.20)
Multiple part-time	0.10 (0.60)	0.14 (0.36)	0.05 (0.60)	-0.39 (0.58)
Household income	-0.08 (0.08)	-0.03 (0.05)	-0.08 (0.08)	0.08 (0.08)
<i>Constant</i>	-0.18 (0.71)	4.81*** (0.34)	-0.67 (0.75)	3.17*** (0.71)
Goodness of fit	χ^2 (20) = 121.50 Prob > χ^2 = 0.00	χ^2 (21) = 168.68 Prob > χ^2 = 0.00	χ^2 (21) = 125.92 Prob > χ^2 = 0.00	χ^2 (19) = 254.73 Prob > χ^2 = 0.00
	Pseudo R^2 = 0.16	Pseudo R^2 = 0.32	Pseudo R^2 = 0.16	Pseudo R^2 = 0.28

Notes:

- Standard errors in parentheses; * $p < .10$ ** $p < .05$ *** $p < .01$.
- Log likelihood test of the hypothesis that all coefficients are jointly equal to zero are rejected at $p < .10$

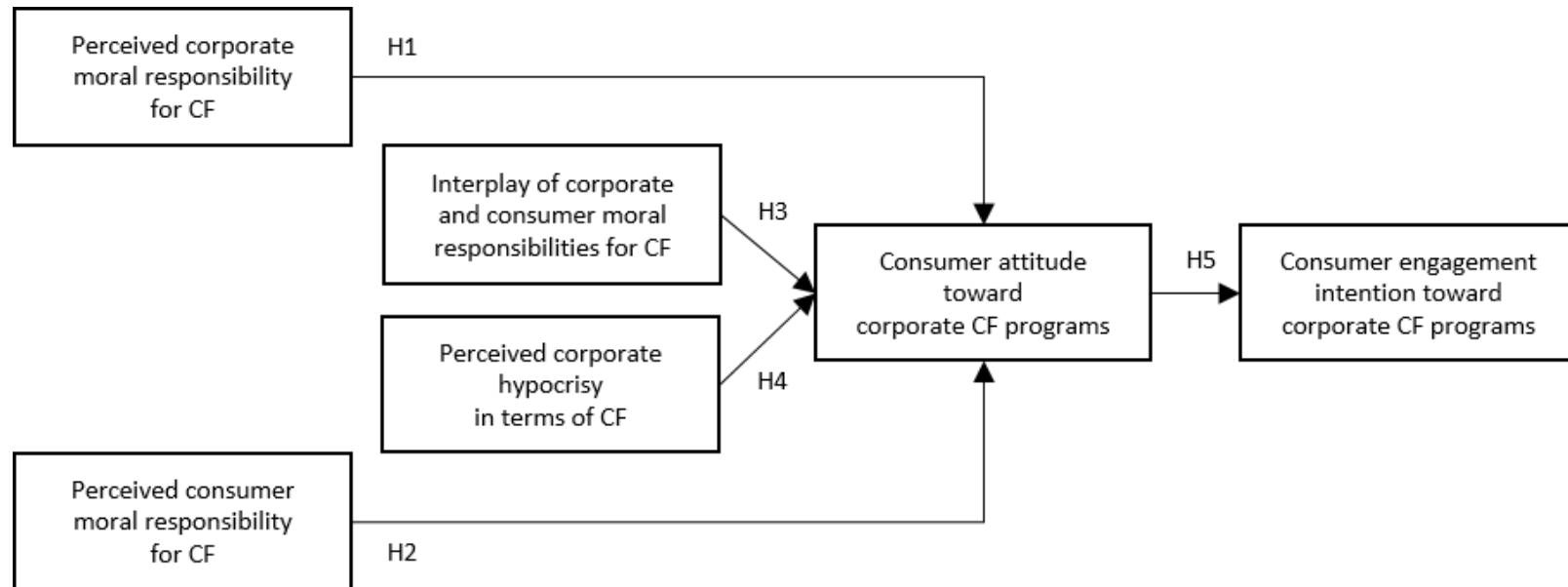


Figure 1. Research model

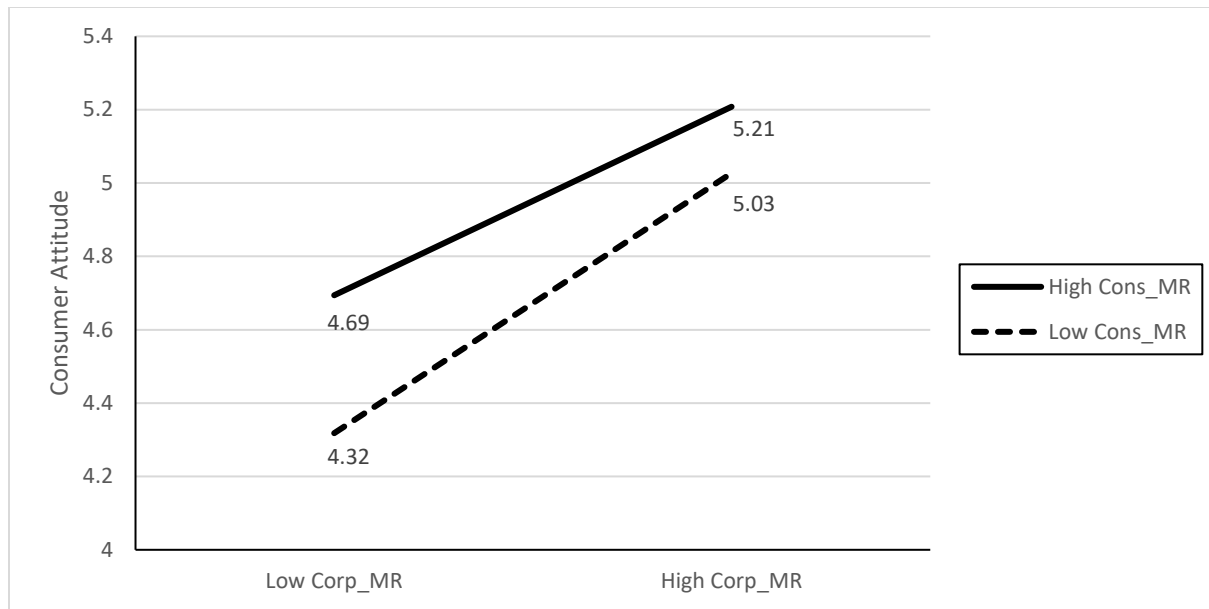


Figure 2. Interaction effect of perceived corporate moral responsibility (CorpMR) and consumer moral responsibility (ConsMR) on consumers' attitudes

Appendix: Examples of multiple-choice screening questions

What system does a **circular economy** endorse?

A "take-make-dispose" system

A "take, make, use, reuse, and reuse again and again" system

Which of the following is/are example(s) of fashion companies' circular economy initiatives?
(You may choose multiple answers if applicable.)

Using regenerative materials in the manufacturing process

Providing product repair services

Executing take-back programs at their retail stores

None of the above

1. What system does a **circular economy** endorse?
 - a) A "take-make-dispose" system
 - b) A "take, make, use, reuse, and reuse again and again" system

Answer: (b)

Those who did not select the correct answer were screened out.

2. Which of the following is/are example(s) of fashion companies' circular economy initiatives?
(You may choose multiple answers if applicable.)
 - a) Using regenerative materials in the manufacturing process
 - b) Providing product repair services
 - c) Executing take-back programs at their retail stores
 - d) None of the above

Answer: (a), (b) and (c)

Those who did not select the correct answer were screened out.

References

- Alhouthi, S., Johnson, C. M., & Holloway, B. B. (2016). Corporate social responsibility authenticity: Investigating its antecedents and outcomes. *Journal of Business Research*, 69(3), 1242-1249. <https://doi.org/10.1016/j.jbusres.2015.09.007>
- Castaldo, S., Perrini, F., Misani, N., & Tencati, A. (2009). The missing link between corporate social responsibility and consumer trust: The case of fair trade products. *Journal of Business Ethics*, 84(1), 1-15. <https://doi.org/10.1007/s10551-008-9669-4>
- Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering*, 4(2), 27-39. <http://dx.doi.org/10.3968/j.mse.1913035X20100402.002>
- Christian, S. (2016, December 20). Can h&m really make fast fashion sustainable? *Esquire*. Retrieved from <https://www.esquire.com/style/news/a51712/hm-fast-fashion-sustainability-recycling/>
- Cook, G. (2020, September 3). The fashion industry overproduces, but what happens to all the unsold clothes? *The Financial Times*. Retrieved from <https://cnaluxury.channelnewsasia.com/obsessions/fashion-industry-overproduces-what-happens-to-unsold-clothes-13074616>
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, T.X.: Harcourt Brace Jovanovich College Publishers.
- Ellen MacArthur Foundation. (2017). *A new textiles economy: Redesigning fashion's future*. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/A-New-Textiles-Economy_Full-Report_Updated_1-12-17.pdf
- Ferasso, M., Beliaeva, T., Kraus, S., Clauss, T., & Ribeiro-Soriano, D. (2020). Circular economy business models: The state of research and avenues ahead. *Business Strategy and the Environment*, 1-19. <https://doi.org/10.1002/bse.2554>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Green Strategy. (2015). What is circular fashion? Retrieved from: <http://www.greenstrategy.se/what-is-circular-fashion-2/>
- Gule, P. T., Maduku, D. K., Delener, N., & Schweikert, C. (2017). *Explaining consumer attitude towards purchasing green products: The role of knowledge, self-identity, and utility*. Paper presented at the Global Business and Technology Association (GBATA) 19th Annual International Conference, Vienna, Austria.
- Ha-Brookshire, J. (2017). Toward moral responsibility theories of corporate sustainability and sustainable supply chain. *Journal of Business Ethics*, 145(2), 227-237. <https://doi.org/10.1007/s10551-015-2847-2>

- Jung, S., & Ha-Brookshire, J. (2017). Perfect or imperfect duties? Developing a moral responsibility framework for corporate sustainability from the consumer perspective. *Corporate Social Responsibility and Environmental Management*, 24(4), 326-340. <https://doi.org/10.1002/csr.1414>
- Kenny, D. A. (2012). Multiple latent variable models: Confirmatory factor analysis. Retrieved from: <http://davidakenny.net/>
- Ki, C. W., Chong, S. M., & Ha-Brookshire, J. E. (2020). How fashion can achieve sustainable development through a circular economy and stakeholder engagement: A systematic literature review. *Corporate Social Responsibility and Environmental Management*, 1-24. <https://doi.org/10.1002/csr.1970>
- Kim, H. Y., & Chung, J. E. (2011). Consumer purchase intention for organic personal care products. *Journal of Consumer Marketing*, 28(1), 40-47. <https://doi.org/10.1108/07363761111101930>
- Leal Filho, W., Ellams, D., Han, S., Tyler, D., Boiten, V. J., Paço, A., . . . Balogun, A. L. (2019). A review of the socio-economic advantages of textile recycling. *Journal of Cleaner Production*, 218, 10-20. <https://doi.org/10.1016/j.jclepro.2019.01.210>
- Lee, S. H., Ha-Brookshire, J., & Chow, P. S. (2018). The moral responsibility of corporate sustainability as perceived by fashion retail employees: A USA-china cross-cultural comparison study. *Business Strategy and the Environment*, 27(8), 1462-1475. <https://doi.org/10.1002/bse.2196>
- Lin, H. F. (2006). Understanding behavioral intention to participate in virtual communities. *CyberPsychology & Behavior*, 9(5), 540-547. <https://doi.org/10.1089/cpb.2006.9.540>
- McKelvey, R. D., & Zavoina, W. (1975). A statistical model for the analysis of ordinal level dependent variables. *Journal of Mathematical Sociology*, 4(1), 103-120. <https://doi.org/10.1080/0022250X.1975.9989847>
- McLaren, A., Goworek, H., Henninger, C. E., Alevizou, P. J. A., Goworek, H., & Ryding, D. (2017). Investigating the relationship between consumer attitudes and sustainable fashion product development. In *Sustainability in fashion* (pp. 171-192). Cham, Switzerland: Palgrave Macmillan.
- Moktadir, M. A., Kumar, A., Ali, S. M., Paul, S. K., Sultana, R., & Rezaei, J. (2020). Critical success factors for a circular economy: Implications for business strategy and the environment. *Business Strategy and the Environment*, 1-25. <https://doi.org/10.1002/bse.2600>
- Mollen, A., & Wilson, H. (2010). Engagement, telepresence and interactivity in online consumer experience: Reconciling scholastic and managerial perspectives. *Journal of Business Research*, 63(9-10), 919-925. <https://doi.org/10.1016/j.jbusres.2009.05.014>
- Niinimäki, K. (2018). *Sustainable fashion in a circular economy*. Espoo, Finland: Aalto University.
- Palumbo, J. (2020, September 2). These terms will help you understand fashion's role in the climate crisis. *CNN Style*. Retrieved from <https://edition.cnn.com/style/article/terms-to-understand-fashion-role-in-climate-crisis-sept/index.html>
- Panwar, R., & Niesten, E. (2020). Advancing circular economy. *Business Strategy and the Environment*, 29(6), 2890-2892. <https://doi.org/10.1002/bse.2602>

- Park, J., & Ha, S. (2012). Understanding pro-environmental behavior: A comparison of sustainable consumers and apathetic consumers. *International Journal of Retail & Distribution Management*, 40(5), 388-403. <https://doi.org/10.1108/09590551211222367>
- Prado-Lorenzo, J. M., Gallego-Alvarez, I., & Garcia-Sanchez, I. M. (2009). Stakeholder engagement and corporate social responsibility reporting: The ownership structure effect. *Corporate Social Responsibility and Environmental Management*, 16(2), 94-107. <https://doi.org/10.1002/csr.189>
- Salpini, C. (2019, November 18). Patagonia opens first worn wear store. *Retail Dive*. Retrieved from <https://www.retaildive.com/news/patagonia-opens-first-worn-wear-store/567533/>
- Seuring, S., & Müller, M. (2008). Core issues in sustainable supply chain management – a delphi study. *Business Strategy and the Environment*, 17(8), 455-466. <https://doi.org/10.1002/bse.607>
- Shim, K., & Kim, J. N. (2017). The impacts of ethical philosophy on corporate hypocrisy perception and communication intentions toward csr. *International Journal of Business Communication*, 232948841774759, 1-12. <https://doi.org/10.1177/2329488417747597>
- Skarmeas, D., & Leonidou, C. N. (2013). When consumers doubt, watch out! The role of csr skepticism. *Journal of Business Research*, 66(10), 1831-1838. <https://doi.org/10.1016/j.jbusres.2013.02.004>
- Stewart, R., & Niero, M. (2018). Circular economy in corporate sustainability strategies: A review of corporate sustainability reports in the fast-moving consumer goods sector. *Business Strategy and the Environment*, 27(7), 1005-1022. <https://doi.org/10.1002/bse.2048>
- Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144-176. <https://doi.org/10.1287/isre.6.2.144>
- The Guardian. (2013, December 18). Nike colordry adds water-free dyed fabric to sustainable materials menu. *The Guardian*. Retrieved from <https://www.theguardian.com/sustainable-business/nike-colordry-water-free-sustainable-materials>
- Vahdati, H., Mousavi, N., & Tajik, Z. M. (2015). The study of consumer perception on corporate social responsibility towards consumers attitude and purchase behavior. *Asian Economic and Financial Review*, 5(5), 831-845. <https://doi.org/10.18488/journal.aefr/2015.5.5/102.5.831.845>
- Varley, R., Roncha, A., Radclyffe-Thomas, N., & Gee, L. (2018). *Fashion management: A strategic approach*. London, U.K.: Red Globe Press.
- Verma, V. K., Chandra, B., & Kumar, S. (2019). Values and ascribed responsibility to predict consumers' attitude and concern towards green hotel visit intention. *Journal of Business Research*, 96, 206-216. <https://doi.org/10.1016/j.jbusres.2018.11.021>
- Wagner, T., Lutz, R. J., & Weitz, B. A. (2009). Corporate hypocrisy: Overcoming the threat of inconsistent corporate social responsibility perceptions. *Journal of Marketing*, 73(6), 77-91. <https://doi.org/10.1509/jmkg.73.6.77>
- Wang, L., & Shen, B. (2017). A product line analysis for eco-designed fashion products: Evidence from an outdoor sportswear brand. *Sustainability*, 9(7), 1136. <https://doi.org/10.3390/su9071136>

- Watkins, L., Aitken, R., & Mather, D. (2016). Conscientious consumers: A relationship between moral foundations, political orientation and sustainable consumption. *Journal of Cleaner Production*, 134, 137-146. <https://doi.org/10.1016/j.jclepro.2015.06.009>
- Winship, C. & Mare, R. D. (1984). Regression models with ordinal variables. *American Sociological Review*, 49(4), 512-525. <https://doi.org/10.2307/2095465>
- Zhu, Q., Geng, Y., & Lai, K. H. (2010). Circular economy practices among chinese manufacturers varying in environmental-oriented supply chain cooperation and the performance implications. *Journal of Environmental Management*, 91(6), 1324-1331. <https://doi.org/10.1016/j.jenvman.2010.02.013>