

# Sustainable apparel purchase intention from the moral emotion perspective

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## Abstract

**Purpose** – This study aims to examine the psychological mechanisms underlying sustainable apparel purchase intention (PI) by investigating the roles of perceived consumer effectiveness (PCE), green trust (GT), anticipated guilt (AG) and moral disengagement (MD) among Vietnamese Generation Z consumers.

**Design/methodology/approach** – A quantitative survey of 720 Generation Z consumers in Vietnam was conducted using purposive sampling and analyzed using partial least squares structural equation modeling (SmartPLS 3.0).

**Findings** – PCE does not significantly influence AG or PI, whereas GT significantly reduces AG, which in turn lowers PI. At the same time, GT retains a positive direct effect on PI. The study shows that external-actor beliefs, represented by GT, reduce guilt-based motivation, whereas internal-actor beliefs, represented by PCE, are not channeled through AG in this context. These opposing effects result in an almost neutral total effect, indicating a competitive mediation mechanism. Furthermore, MD weakens the positive effect of AG on PI, reducing the motivational power of guilt.

**Practical implications** – Firms should design sustainability communication carefully. GT should be strengthened without reducing consumers' sense of personal responsibility. Combining trust-based messages with cues that reinforce individual responsibility can help sustain motivation.

**Originality/value** – This study challenges conventional models of sustainable consumption by theorizing sustainability-related beliefs as distinct internal- and external-actor mechanisms with asymmetric effects within a guilt-based mechanism. It advances emotion theory by demonstrating that the effectiveness of sustainability beliefs depends not only on belief strength but also on construal-level compatibility with the decision context.

**Keywords** Sustainable apparel, Anticipated guilt, Perceived consumer effectiveness, Green trust, Moral disengagement

**Paper type** Research article

## 1. Introduction

The fashion industry is increasingly putting pressure on the environment by using excessive water and energy and generating massive amounts of waste. Fast fashion exacerbates the problem by encouraging frequent consumption, thereby increasing environmental impact (Niinimäki *et al.*, 2020). To remain competitive and build consumer trust and loyalty, firms are now turning to sustainable apparel to reduce their potential environmental harm (Henninger *et al.*, 2016). However, the effectiveness of these efforts ultimately depends on whether consumers are willing to adopt sustainable consumption behaviors.

Prior research identifies sustainability-related beliefs as key drivers of pro-environmental consumption as they shape perceptions of efficacy, responsibility, and trust (Ellen *et al.*, 1991; Papadopoulos *et al.*, 2025). These beliefs can be broadly conceptualized into internal-actor beliefs and external-actor beliefs, depending on the locus of agency. Perceived consumer effectiveness (PCE) represents internal-actor beliefs, reflecting individuals' perceived impact on environmental outcomes (Ellen *et al.*, 1991; Kim and Choi, 2005). In contrast, green trust (GT) represents external-actor beliefs, reflecting confidence in firms' environmental



performance (Chen, 2010). Although sustainability-related beliefs include multiple dimensions, these two constructs provide representative proxies for internal and external agency in the sustainable apparel context (White *et al.*, 2019).

However, these beliefs do not always translate directly into purchase intention (PI). Instead, their effects often operate through intermediate mechanisms (Bamberg and Möser, 2007). While prior studies emphasize cognitive and normative mediators, these mechanisms do not fully explain the persistent belief-behavior gap (Carrington *et al.*, 2010). This gap is particularly evident in sustainable apparel, where ethical considerations compete with price, style and convenience (Joy *et al.*, 2012; McNeill and Moore, 2015). This limitation suggests the need to consider more proximal mechanisms that translate beliefs into situational motivation. Recent research highlights moral emotions as such mechanisms (Tangney *et al.*, 2007; Antonetti and Maklan, 2014). Among them, anticipated guilt (AG), referred to as the expected feeling if one fails to act in line with moral standards (Conner *et al.*, 2015), is relevant. As a self-regulatory emotion, it motivates behavior by helping individuals avoid negative self-evaluation (Tangney *et al.*, 2007; Antonetti and Maklan, 2014).

However, the influence of AG is not always consistent. In apparel consumption, trade-offs between sustainability and other attributes may weaken its influence (Joy *et al.*, 2012). Consumers may anticipate guilt yet fail to act. This suggests that moral emotions are contingent rather than automatic (Onwezen *et al.*, 2014). This highlights the role of boundary conditions that determine whether moral emotions translate into behavior. Such conditions include justification, responsibility delegation and moral neutralization (Detert *et al.*, 2008; Moore *et al.*, 2012). Among them, moral disengagement (MD) is particularly relevant because it involves cognitive processes through which individuals justify or distance themselves from morally inconsistent behavior (Bandura *et al.*, 1996; Moore *et al.*, 2012).

Building on this reasoning, the present study proposes a framework in which sustainability-related beliefs are represented by PCE (internal-actor) and GT (external-actor). These beliefs are proposed to influence sustainable apparel PI through AG, and this mechanism is contingent on MD. This research is particularly relevant among Gen Z consumers, whose sustainable apparel choices are often constrained by price, availability and brand cues despite strong sustainability awareness (Wang *et al.*, 2021). The present study contributes to the literature in three ways. First, it challenges the common assumption that sustainability-related beliefs uniformly translate into action by showing that their effects are bounded within the present guilt-based model. This study examines whether two representative sustainability-related beliefs, PCE and GT, explain one specific moral-emotional pathway in sustainable apparel consumption. Second, it distinguishes internal- and external-actor beliefs within a guilt-based mechanism and investigates whether these two beliefs operate symmetrically through reduced AG in the context of sustainable apparel consumption. Third, it explains when moral emotions fail to drive behavioral intention by identifying MD as a key boundary condition.

## 2. Literature review and hypothesis development

### 2.1 Sustainability-related beliefs

Prior research has generally treated sustainability-related beliefs as favorable antecedents of pro-environmental consumption across contexts (White *et al.*, 2019; Papadopoulos *et al.*, 2025). Sustainability-related beliefs can be categorized into two groups based on the locus of agency: internal-actor beliefs and external-actor beliefs. Internal-actor beliefs reflect individuals' perceived ability to influence environmental outcomes, whereas external-actor beliefs reflect confidence in external actors. In this study, PCE represents internal-actor beliefs, while GT represents external-actor beliefs, and both serve as representative proxies for examining how different agency orientations influence sustainable apparel consumption.

However, the effects of these constructs on sustainable consumption are not always consistent, especially in apparel consumption (McNeill and Moore, 2015; Wang *et al.*, 2021). First, while PCE has been widely linked to pro-environmental behavior through enhanced

perceived agency (Ellen *et al.*, 1991; Kim and Choi, 2005), its influence on PI is not always consistent. Meta-analytic evidence indicates that PCE primarily operates through cognitive pathways such as perceived behavioral control and personal norms rather than through immediate emotional responses (Bamberg and Möser, 2007). This creates a theoretical tension: individuals may believe their actions matter but may not experience sufficient situational motivation to act.

A more pronounced inconsistency emerges for GT. Despite being viewed as a positive driver of sustainable consumption (Joshi and Rahman, 2015; Papadopoulos *et al.*, 2025), GT, as an external-actor belief, shifts perceived responsibility toward external resources. When environmental responsibility is perceived as externalized, individuals may feel less obliged to act (Truelove *et al.*, 2014; Grappi *et al.*, 2013). This mechanism is particularly relevant in sustainable apparel, where structural constraints such as price premiums, limited availability and uncertainty about product effectiveness may reduce motivation (Joy *et al.*, 2012; McNeill and Moore, 2015).

More broadly, the effects of sustainability-related beliefs on PI operate through intermediate psychological mechanisms (Bamberg and Möser, 2007; White *et al.*, 2019). While most existing studies focus on cognitive and normative mediators, such as attitudes and personal norms, these mechanisms do not fully explain the persistent belief-behavior gap (Carrington *et al.*, 2010). Especially, limited attention has been paid to moral-emotional mechanisms, which may be more proximal to decision-making than cognitive evaluations. From a moral emotion perspective, AG represents a potential key mechanism through which sustainability-related beliefs can be translated into situational motivation. AG has been shown to motivate pro-environmental behavior by activating self-regulation processes (Tangney *et al.*, 2007; Antonetti and Maklan, 2014).

However, the influence of AG is not always consistent. Moral emotion theory suggests that the behavioral impact of guilt depends on whether it is cognitively neutralized (Baumeister *et al.*, 2007). This implies that the relationship between AG and PI is contingent on boundary conditions. Among these conditions, MD is particularly relevant. MD refers to cognitive processes through which individuals justify or neutralize morally inconsistent behavior, thereby reducing the impact of moral emotions (Bandura *et al.*, 1996; Moore *et al.*, 2012).

To wrap up, these inconsistencies highlight that sustainability-related beliefs, represented by PCE and GT, may not directly translate into PI. Instead, their effects operate through a moral-emotional mechanism, namely AG, whose effectiveness further depends on boundary conditions such as MD.

### *2.2 Perceived consumer effectiveness and anticipated guilt*

PCE refers to the belief that individuals' sustainable consumption can produce collective environmental benefits (Ellen *et al.*, 1991; Roberts, 1996). AG is the expectation of feeling uncomfortable or blaming oneself if individuals fail to act consistently with their moral standards in a specific situation (Conner *et al.*, 2015). Based on the norm activation model and value-belief-norm theory, higher PCE should increase moral obligation and strengthen pro-environmental motivation (Cao and Nguyen, 2024). However, because PCE is a broad efficacy belief, it often operates through cognitive pathways rather than immediate emotional responses (Andrade and Vieites, 2025).

In the context of sustainable apparel, acting on this sustainability-related belief also requires personal trade-offs, including potential compromises in style, design or aesthetic preferences (Rausch and Kopplin, 2021; Bhandari *et al.*, 2022). Under this tension between collective benefit and personal cost, consumers with high PCE may engage in responsibility delegation by assuming that broader collective action can still address environmental harm even if they do not personally choose sustainable apparel (Darley and Latané, 1968; Andrade and Vieites, 2025). In this way, a strong belief in collective consumer effectiveness may reduce perceived personal responsibility for a single unsustainable purchase. Because AG depends on

personal responsibility attribution (Ai and Rosenthal, 2024), this delegated responsibility may weaken the self-blame associated with not purchasing sustainable apparel. Consequently, consumers with high PCE may experience lower AG, as their broader efficacy beliefs provide cognitive justification for reducing personal moral pressure in specific purchase situations.

Based on this reasoning, the following hypothesis is proposed:

- H1. Perceived consumer effectiveness is negatively associated with anticipated guilt about not purchasing sustainable apparel.

### 2.3 Green trust and anticipated guilt

GT refers to the extent to which consumers believe and trust a brand's environmental performance (Chen, 2010). As an external-actor belief, GT shifts the locus of agency and responsibility toward what firms are doing, not what consumers can do. Empirical evidence shows that when consumers trust that firms are genuinely reducing environmental harm, they may infer that environmental responsibility is already being addressed at the organizational level. As a result, their own sense of personal moral pressure may decline (Grappi et al., 2013).

This mechanism may be especially relevant for Gen Z consumers in emerging markets, where sustainable apparel choices are often constrained by higher prices, limited accessibility and other contextual trade-offs (Joy et al., 2012; McNeill and Moore, 2015; Niinimäki et al., 2020). Accordingly, when young consumers believe that firms are adequately addressing environmental issues, their own feelings of moral responsibility may weaken, reducing AG about not choosing sustainable apparel (Papadopoulos et al., 2025). Therefore, the following hypothesis is posited:

- H2. Green trust is negatively associated with anticipated guilt about not purchasing sustainable apparel.

### 2.4 Anticipated guilt and sustainable apparel purchase intention

From a moral emotion perspective, self-conscious emotions such as guilt function as internal regulatory mechanisms that translate abstract moral evaluations into behavioral motivation (Tangney et al., 2007; Baumeister et al., 2007). In this sense, AG is not merely an effective response but a forward-looking mechanism that guides decision-making by helping individuals avoid negative self-evaluation. Prior studies have shown that AG encourages individuals to align their behavior with moral expectations (Onwezen et al., 2013; Antonetti and Maklan, 2014), and more recent evidence continues to confirm its role in shaping sustainable consumption decisions (Culiberg et al., 2023; Niu et al., 2025).

This mechanism is argued to be relevant in the context of sustainable apparel. Among Generation Z, fashion is not only functional but also expressive of identity (Branca et al., 2025). Exposure to sustainability messages and peer expectations may therefore make non-sustainable choices feel inconsistent with one's values, increasing the expectation of guilt or regret and strengthening the intention to purchase sustainable apparel (Ngo et al., 2024). Based on the above reasoning, the following hypothesis is proposed:

- H3. Anticipated guilt is positively associated with sustainable apparel purchase intention.

### 2.5 The mediating role of anticipated guilt

Based on the above arguments, AG is conceptualized as a proximal moral-emotional mechanism through which sustainability-related beliefs influence sustainable apparel PI. This study does not treat PCE and GT as direct motivational forces but rather conceptualizes them as distal sustainability-related beliefs. Their behavioral relevance depends on whether they are translated into situational moral emotions. This perspective is grounded in moral emotion

theory, which suggests that moral beliefs and standards do not directly drive behavior but require activation through self-conscious emotions such as guilt and shame that provide the motivational force linking moral cognition to action (Tangney *et al.*, 2007; Haidt, 2003). In this view, emotions function as the proximal mechanism that converts abstract moral beliefs into concrete behavioral motivation.

Empirical research indicates that AG helps translate environmental concerns into pro-environmental choices. For instance, Antonetti and Maklan (2014) showed that moral emotions are critical in converting ethical perceptions into ethical consumption responses. Culiberg *et al.* (2023) found that AG positively predicts intentions to reduce consumption for environmental reasons, and Niu *et al.* (2025) showed that anticipated negative emotions remain important predictors of pro-environmental behavior. Zhong *et al.* (2025) also suggest that AG can strengthen intentions to avoid non-environmental actions and move consumers toward greener choices.

However, the two antecedents are not expected to influence this mediator in identical ways. Prior research shows that efficacy beliefs primarily operate through cognitive pathways, such as perceived behavioral control and personal norms, rather than directly triggering situational emotional responses (Bamberg and Möser, 2007; White *et al.*, 2019). Thus, as an internal-actor belief capturing a broad sense of personal efficacy, PCE shapes the extent to which consumers feel morally uncomfortable about not choosing sustainable apparel rather than acting as a direct motivational force. By contrast, as GT reflects external-actor beliefs, it shifts responsibility to external actors, making individuals feel less personal obligation to act (Truelove *et al.*, 2014; Grappi *et al.*, 2013). In the context of sustainable consumption, trusting that firms are already addressing environmental problems may reduce AG by signaling that responsibility is being managed at the organizational level. In both cases, AG serves as the proximal mechanism that explains how these beliefs become behaviorally meaningful in a specific purchase situation, consistent with moral emotion theory, which posits that moral beliefs influence behavior through self-conscious emotions rather than through direct effects (Tangney *et al.*, 2007; Antonetti and Maklan, 2014). When these beliefs fail to activate guilt, they may not motivate sustainable apparel PI. Hence, the following hypotheses are proposed:

- H4a. Anticipated guilt fully mediates the relationship between perceived consumer effectiveness and sustainable apparel purchase intention.
- H4b. Anticipated guilt fully mediates the relationship between green trust and sustainable apparel purchase intention.

### 2.6 The moderating role of moral disengagement

MD refers to the cognitive restructuring processes through which individuals justify, excuse or reinterpret behavior that violates their moral standards, thereby reducing self-sanction and psychological discomfort (Bandura *et al.*, 1996; Moore, 2008). Building on self-regulation theory, individuals actively manage the influence of moral standards and emotions through cognitive processes (Bandura, 2002; Tangney *et al.*, 2007). Within this framework, MD explains when moral emotions fail to translate into behavior by weakening their self-regulatory function. Accordingly, MD is conceptualized as a boundary condition that weakens the translation of AG into sustainable apparel PI. Consumers may still anticipate guilt but simultaneously engage in justification, responsibility shifting or moral neutralization, thereby reducing its motivational force (Bandura *et al.*, 1996; Detert *et al.*, 2008). From a self-regulation perspective, moral emotions such as guilt motivate behavior only when they remain psychologically salient and are not cognitively neutralized (Baumeister *et al.*, 2007; Hofmann *et al.*, 2012). MD disrupts this process by weakening the link between moral self-evaluation and behavioral intention.

Empirical research supports this mechanism. Prior studies show that MD weakens the influence of moral standards and emotions on behavior by disrupting self-regulatory processes

(Moore *et al.*, 2012). In consumer contexts, this process manifests as a greater tendency to justify ethically questionable choices and a reduced likelihood of acting on moral concerns (Antonetti and Maklan, 2014; McCormack and Chowdhury, 2024). Accordingly, when MD is low, AG remains psychologically salient and functions as a strong self-regulatory force that increases pro-environmental intention (Onwezen *et al.*, 2014; Bamberg and Möser, 2007). In contrast, when MD is high, consumers are more likely to reinterpret or justify their decisions, which weaken the effect of guilt on PI (Detert *et al.*, 2008; Moore *et al.*, 2012). Thus, MD does not eliminate AG but attenuates its behavioral impact by weakening its self-regulatory function.

Accordingly, the following hypothesis is posited:

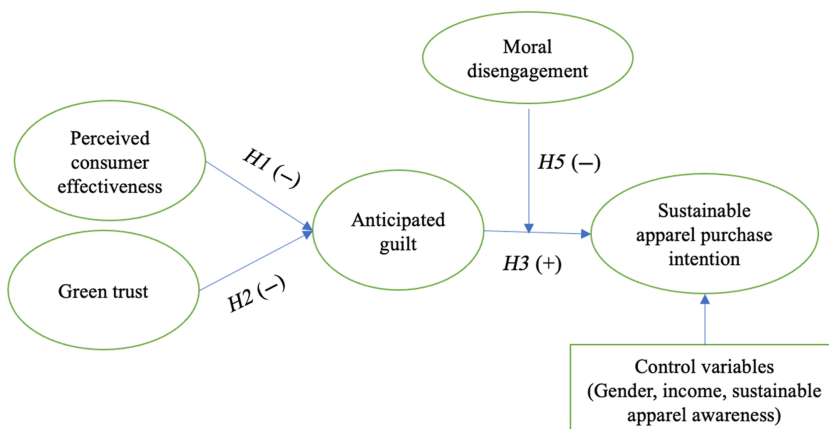
- H5. Moral disengagement weakens the positive relationship between anticipated guilt and sustainable apparel purchase intention.

The research model is illustrated in Figure 1.

### 3. Methodology

#### 3.1 Measurement scales

All variables were measured using scales from earlier studies, with responses rated on a five-point scale from strongly disagree (1) to strongly agree (5). The original wording of the items was kept as much as possible with only minor changes to fit the research context. PCE was measured with four items adapted from Roberts (1996) that reflect how much people believe their behaviors can reduce environmental and resource problems. GT was measured using four items adapted from Chen (2010) that reflect the perceived credibility and dependability of firms' environmental claims. AG was measured with five items that were adapted and modified from the guilt inventory developed by Kugler and Jones (1992). Respondents were asked to answer the following sentence: "Imagine that you are in a store and decide not to buy an environmentally friendly product. How would you feel?" Five items were used to capture emotions, including feeling guilty, remorseful, sorry, bad and ashamed. This scenario-based operationalization is consistent with the conceptualization of AG adopted in this study, namely, a cognitive expectation of guilt-related feelings in a future non-purchase situation rather than an emotion currently experienced in the present. MD was measured with seven items adapted from Wu *et al.* (2021). These items show how people explain or excuse less



Note: H4a, H4b not indicated in the model: Mediation effect of anticipated guilt

Figure 1. Research model. Source: Author's own work

environmentally friendly behavior, such as by shifting responsibility to others or blaming outside factors. Sustainable apparel PI was measured using four items from [Ngo et al. \(2024\)](#) that ask how likely people are to buy sustainable clothing.

### 3.2 Data collection and analysis

This study used a quantitative survey to gather data from Gen Z consumers living in major cities in Vietnam. Participants were recruited through purposive sampling, and the survey link was shared in fashion-related Facebook groups where young people often talk about fashion trends and shopping habits. This sampling approach is appropriate for theory testing in a context where apparel-related beliefs, preferences and moral evaluations are likely to be salient. Recruiting respondents from fashion-related online communities increases the likelihood that participants are meaningfully engaged with apparel-related decision-making, making this an information-rich context for examining sustainable apparel PI ([Campbell et al., 2020](#)). However, because the sampling frame captures a more apparel-engaged segment of Gen Z consumers, the findings should be interpreted as theoretically informative rather than nationally representative.

Participants were informed that their responses would be anonymous and that taking part was voluntary. The data were collected in September and October 2025, and 720 valid responses were used for the analysis. Partial least squares structural equation modeling (PLS-SEM) with SmartPLS 3.0 was used to test both the measurement and structural models. PLS-SEM was considered appropriate because the study is partly prediction-oriented, includes simultaneous mediation and moderation and seeks to extend theory by integrating constructs that have not been examined together extensively in the sustainable apparel context. The proposed hypotheses were examined via a bootstrap procedure with 5,000 resamples. Gender, income and sustainable apparel awareness were included as control variables. To reduce careless or invalid responses, the dataset was screened before analysis. Incomplete responses and cases with patterned answering or implausibly short completion times were excluded from the final sample. The study also used a full collinearity assessment and Harman's single-factor test to check for common method bias (CMB).

### 3.3 Respondent characteristics

The sample included 53.2% females, 45.1% males and 1.7% identifying as other genders. Respondents are distributed across multiple income brackets, although it is slightly concentrated in the middle-income segment, with the largest group earning between 10 and under 15 million Vietnamese dong (VND) (27.4%). This is followed by those earning 5 to under 10 million VND (21.7%) and 15 to under 20 million VND (20.1%). Only 28.1% clearly understood sustainable apparel, while 53.3% had heard of it but did not fully understand it, and 18.6% were not aware of the concept. This aligns with earlier studies, which show that Gen Z commonly involve themselves with sustainability as a trend rather than through in-depth knowledge ([Wang et al., 2021](#)). This distribution highlights a moderate level of awareness within the sample, with a substantial proportion of respondents still lacking a full understanding of sustainable apparel. [Table 1](#) below indicates the demographic profile, describing respondents' gender, income, age and sustainable apparel awareness levels.

## 4. Results

### 4.1 Measurement model

The measurement model was assessed according to PLS-SEM guidelines. Reliability and convergent validity were evaluated using Cronbach's alpha, composite reliability (CR) and average variance extracted (AVE). As reported in [Table 2](#), all constructs exceeded the recommended thresholds, with Cronbach's alpha and CR values above 0.70 and AVE values above 0.50, indicating satisfactory internal consistency and convergent validity. MD4 was

**Table 1.** Demographic profile of respondents

Variable	Category	Frequency ( <i>n</i> )	Percentage (%)
Gender	Male	325	45.1
	Female	383	53.2
	Others	12	1.7
Income	Under 5 million VND	123	17.1%
	5 to under 10 million VND	156	21.7%
	10 to under 15 million VND	197	27.4%
	15 to under 20 million VND	145	20.1%
	From 20 million VND	99	13.7%
Sustainable apparel awareness	Not have heard of before	134	18.6
	Have heard of but not fully understand	384	53.3
	Clearly understand	202	28.1
<i>Total</i>		720	100%

**Source(s):** Author's own work

removed from the final model due to its low loading and weak conceptual fit. After removing MD4, the convergent validity and conceptual coherence of MD improved. The retained items showed acceptable loadings and supported the use of the revised MD construct in the final model.

Discriminant validity was assessed using the Fornell–Larcker criterion. According to Table 3, the square roots of AVE for each construct exceeded the corresponding inter-construct correlations, supporting discriminant validity. This pattern indicates that each construct shares more variance with its indicators than with other constructs in the model (Fornell and Larcker, 1981).

The heterotrait-monotrait ratio of correlations (HTMT) criterion was checked using bootstrapping with 5,000 samples and a one-tailed *t*-test at a 90% significance level, keeping the error probability at 5%. All the HTMT values were below the maximum threshold of 0.85 (see Table 4). Results from Tables 3 and 4 confirm discriminant validity.

#### 4.2 Common method bias

First, procedural remedies were also applied to reduce CMB, including anonymous participation, voluntary response and a questionnaire structure that clearly separated the construct sections. Then, Harman's single-factor test was conducted by loading all measurement items into an exploratory factor analysis. The first factor accounted for 24.3% of the total variance, which is below the commonly used threshold of 50%, suggesting that CMB is unlikely to be a serious concern. Second, all full collinearity variance inflation factor values were well below the threshold of 3.3, providing further evidence that CMB does not influence the results.

#### 4.3 Structural model

The structural model was estimated using PLS-SEM and bootstrapping with 5,000 resamples to test the significance of path coefficients, indirect effects and interaction terms. The model explains 7.5% ( $R^2 = 0.075$ ) of the variance in AG and 18.9% ( $R^2 = 0.189$ ) of the variance in sustainable apparel PI. Predictive relevance values ( $Q^2 = 0.097$  and 0.152, respectively) were positive for both endogenous constructs, indicating acceptable predictive relevance. The standardized root mean squared residual value of 0.048 indicates an acceptable model fit according to the commonly used PLS-SEM guidelines. Effect sizes indicate that AG is the most influential predictor in the model ( $f^2 = 0.180$ , medium effect), while GT ( $f^2 = 0.079$ ) and the moderating effect of MD ( $f^2 = 0.041$ ) exert smaller but still meaningful influences. In

**Table 2.** Validity and reliability of constructs

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
Perceived consumer effectiveness (PCE) (Roberts, 1996)	PCE1: It is worthless for the individual consumer to do anything about pollution. (R)	0.915	0.880	0.911	0.721
	PCE2: When I buy products, I try to consider how my use of them will affect the environment and other consumers	0.815			
	PCE3: Since one person cannot have any effect upon pollution and natural resource problems, it doesn't make any difference what I do. (R)	0.878			
	PCE4: Each consumer's behavior can have a positive effect on society by purchasing products sold by socially responsible companies	0.781			
Green trust (GT) (Chen, 2010)	GT1: Brands' environmental commitments are generally reliable	0.893	0.916	0.941	0.799
	GT2: Brands' environmental performance is generally dependable	0.885			
	GT3: Brands' environmental argument is generally trustworthy	0.896			
	GT4: Brands keep promises and commitments for environmental protection	0.902			
Anticipated guilt (AG) (Kugler and Jones, 1992)	<i>Imagine that you are in a store and decide not to buy an environmentally friendly product. How would you feel?</i>		0.950	0.961	0.833
	AG1: ... I would feel guilty	0.896			
	AG2: ... I would feel remorseful	0.903			
	AG3: ... I would feel sorry	0.896			
	AG4: ... I would feel bad	0.900			
AG5: ... I would feel ashamed	0.966				
Moral disengagement (MD) (Wu et al., 2021)	MD1: For the convenience of my friends/relatives, it's alright to perform less eco-friendly behaviors sometimes	0.928	0.982	0.982	0.899
	MD2: Considering the pollution caused by big enterprises, it's hardly a sin for us to perform environmentally harmful behaviors sometimes	0.982			
	MD3: People cannot be blamed for doing environmentally harmful behaviors if their leaders pressure them to do so	0.959			
	MD5: Conducting environmentally harmful behaviors for a little while doesn't cause big harm to the environment	0.953			
	MD6: Wearing animal fur is okay; anyhow, animals are not human beings	0.966			
	MD7: If I'm engaged in less eco-friendly behaviors, it's probably because the government is not doing enough to support the environment	0.897			

(continued)

**Table 2.** Continued

Constructs	Items	Loadings	Cronbach's alpha	CR	AVE
Purchase intention (PI) (Ngo <i>et al.</i> , 2024)	PI1: I consider purchasing sustainable clothing	0.887	0.910	0.937	0.788
	PI2: I intend to buy sustainable clothing instead of conventional clothing in the future	0.894			
	PI3: I might possibly buy sustainable clothing in the future	0.884			
	PI4: I would consider buying sustainable clothing if I happen to see them in a (n) (online store)	0.886			

**Source(s):** Author's own work

**Table 3.** Fornell–Larcker criterion

Variable	AG	GT	MD	PCE	PI
AG	0.913				
GT	−0.267	0.894			
MD	−0.040	0.200	0.948		
PCE	−0.047	−0.046	−0.027	0.849	
PI	0.371	0.001	−0.024	0.011	0.888

**Note(s):** PCE: perceived consumer effectiveness; AG: anticipated guilt; GT: green trust; PI: purchase intention; MD: moral disengagement

**Source(s):** Author's own work

**Table 4.** HTMT criterion

Variable	AG	GT	MD	PCE	PI
Anticipated guilt (AG)					
Green trust (GT)	0.285				
Moral disengagement (MD)	0.038	0.120			
Perceived consumer effectiveness (PCE)	0.045	0.055	0.035		
Purchase intention (PI)	0.396	0.028	0.019	0.032	

**Source(s):** Author's own work

contrast, PCE demonstrates a negligible effect ( $f^2 = 0.004$ ), suggesting limited explanatory relevance in this context.

Although the model shows acceptable predictive relevance, the explained variance in AG is modest ( $R^2 = 0.075$ ). This suggests that PCE and GT capture only a limited part of the antecedent structure of AG in the present context. This pattern is consistent with prior meta-analytic and integrative frameworks showing that pro-environmental behavior is typically shaped by multiple interacting drivers rather than a single belief-based mechanism (Bamberg and Möser, 2007; White *et al.*, 2019).

As can be seen from Table 5, PCE shows a negative association with AG ( $\beta = -0.058$ ), but this association is not statistically significant ( $t = 1.187, p > 0.05$ ). Therefore, hypothesis H1 is

not supported. In contrast, GT has a significant negative effect on AG ( $\beta = -0.270$ ;  $t$ -value = 7.759;  $p < 0.001$ ), thus supporting hypothesis H2. AG, in turn, has a positive effect on sustainable apparel PI ( $\beta = 0.398$ ;  $t$ -value = 12.706;  $p < 0.001$ ), supporting hypothesis H3.

The mediation results do not support the proposed full-mediation pattern for PCE. The indirect effect of PCE on sustainable apparel PI through AG is negative but not statistically significant ( $\beta = -0.023$ ,  $t = 1.178$ ,  $p > 0.05$ ). Thus, hypothesis H4a is not supported. A supplementary robustness check further showed that the direct effect of PCE on PI remained weak and non-significant ( $\beta = 0.048$ ,  $t = 1.097$ ,  $p > 0.05$ ). These results show that the present guilt-based mechanism does not explain how PCE relates to PI in this context. Rather than supporting full mediation, the findings indicate that PCE has limited explanatory power in the current model.

For GT, the results provide evidence of a significant indirect effect through AG, but they do not support a strict full-mediation interpretation. GT reduces AG, and this reduction is associated with lower PI through a significant negative indirect effect ( $\beta = -0.107$ ,  $t = 6.512$ ,  $p < 0.001$ ). This finding supports the presence of mediation and indicates that AG is one important pathway through which GT relates to PI. However, the supplementary analysis reported above also shows that GT retains a positive direct effect on sustainable apparel PI ( $\beta = 0.100$ ,  $t = 2.897$ ,  $p < 0.01$ ). Accordingly, hypothesis H4b is supported only in terms of indirect effect, but the results are more consistent with partial and competitive mediation than with full mediation. When both pathways are considered jointly, the total effect of GT on PI is approximately neutral ( $\beta = -0.007$ ), indicating that the positive trust-based pathway is almost offset by the negative indirect pathway through AG. This pattern suggests that GT exerts opposing influences in the present model: it may support PI through favorable brand evaluation, while simultaneously weakening guilt-based motivation by shifting perceived responsibility away from the consumer.

Finally, the interaction term between AG and MD is negative and statistically significant ( $\beta = -0.189$ ,  $t = 6.146$ ,  $p < 0.001$ ), supporting hypothesis H5. This result indicates that MD weakens the positive effect of AG on sustainable apparel PI. In other words, when consumers are more likely to justify or neutralize morally inconsistent choices, AG becomes less effective as a motivational force. To illustrate this interaction more clearly, a simple slope plot is presented in Figure 2.

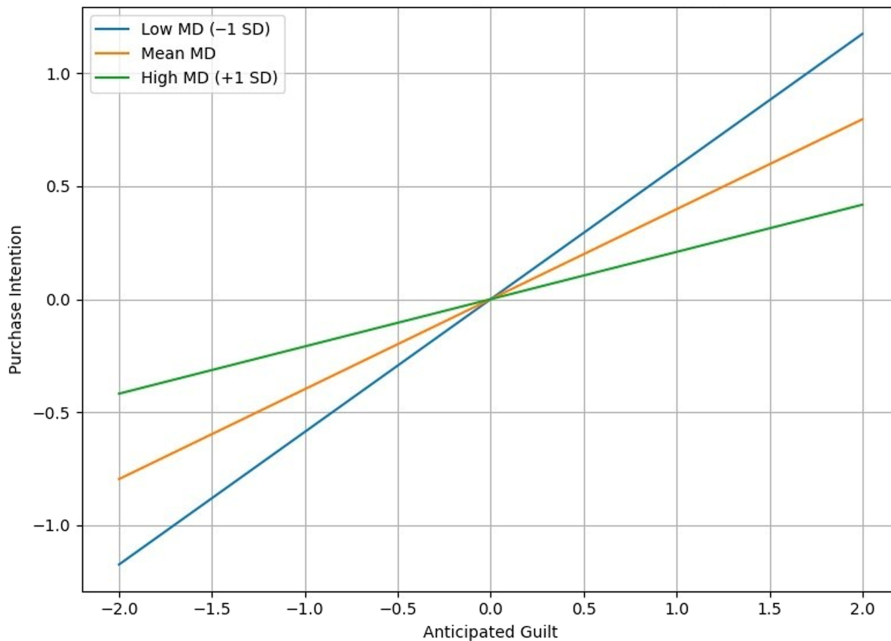
As shown in Figure 2, the positive effect of AG on PI is substantially stronger at lower levels of MD (slope = 0.587, 95% confidence interval (CI) [0.466, 0.710]) than at higher levels of MD (slope = 0.209, 95% CI [0.083, to 0.327]). This pattern confirms that MD weakens the translation of guilt into behavioral intention.

**Table 5.** Hypothesis testing results

Hypotheses	$\beta$	$t$ -value	$p$ -value	Conclusion
H1: PCE → AG	-0.058	1.187	0.255	Not supported
H2: GT → AG	-0.270	7.759	<0.001	Supported
H3: AG → PI	0.398	12.706	<0.001	Supported
H4a: PCE → AG → PI	-0.023	1.178	0.239	Not supported
H4b: GT → AG → PI	-0.107	6.512	<0.001	Partially supported
H5: MD × AG → PI	-0.189	6.146	<0.001	Supported
Gender → PI	-0.022	0.636	0.525	
Income → PI	0.062	1.811	0.070	
Sustainable apparel awareness → PI	-0.008	0.229	0.819	

**Note(s):** PCE: perceived consumer effectiveness; AG: anticipated guilt; GT: green trust; PI: purchase intention; MD: moral disengagement

**Source(s):** Author's own work



**Figure 2.** Simple slope for moderation effect of moral disengagement (MD). Source: Author's own work

Control variables, including income, gender and sustainable apparel awareness, do not show significant effects on PI in the present model, suggesting that the main relationships in the model are robust after accounting for these controls.

## 5. Discussion, limitations and recommendations for future research

### 5.1 Discussion

This study reexamines how sustainability-related beliefs influence sustainable apparel PI through a moral-emotional pathway. The results demonstrate that AG positively predicts PI, supporting prior research that identifies guilt as a self-regulatory mechanism encouraging sustainable consumption (Onwezen *et al.*, 2014; Antonetti and Maklan, 2014). However, the findings also reveal that the antecedents of AG do not uniformly operate, highlighting a more complex psychological structure than commonly assumed. Particularly, GT reduces AG, whereas PCE does not significantly influence it. This asymmetry suggests that sustainability-related beliefs differ not only in strength but also in their psychological orientation. While PCE reflects an internal-actor belief about individual agency (Ellen *et al.*, 1991), GT represents an external-actor belief directed toward firms' environmental responsibility (Chen, 2010). As a result, GT may shift perceived responsibility away from the individual, thereby weakening the moral pressure that would otherwise manifest as AG (Truelove *et al.*, 2014; Grappi *et al.*, 2013).

The mediation results further clarify this asymmetry. GT shows a significant negative indirect effect on PI through AG. At the same time, GT maintains a positive direct effect on PI, reflecting its role in reducing skepticism and enhancing favorable brand evaluations (Joshi and Rahman, 2015; Papadopoulos *et al.*, 2025). When these two pathways are considered jointly, the total effect becomes approximately neutral. This pattern indicates a competitive mediation mechanism, in which GT simultaneously facilitates PI through cognitive evaluation while

undermining it through reduced moral-emotional motivation. This finding provides an important theoretical insight into the unintended consequences of sustainability communication. While prior research has largely treated GT as a uniformly positive driver of pro-environmental behavior (Chen, 2010; White *et al.*, 2019), the present findings suggest that its effects are more complex and may involve opposing psychological pathways. When consumers perceive that firms are already acting responsibly, they may experience reduced personal obligation to act, consistent with responsibility delegation and MD processes (Truelove *et al.*, 2014; Bandura *et al.*, 1996). This dynamic helps explain why GT does not always translate into stronger behavioral outcomes and may weaken guilt-based motivation under certain conditions.

In contrast, the null effects of PCE across all tested pathways provide new empirical evidence that broad pro-environmental efficacy beliefs may be too abstract to activate product-specific moral emotions or purchase intentions in sustainable apparel. Drawing on construal level theory (Trope and Liberman, 2010), this evidence suggests that high-level construal beliefs such as PCE lack sufficient psychological proximity to trigger low-level construal responses such as AG or immediate behavioral intention, a disconnect that recent literature on psychological distance and concrete consumer behavior has begun to highlight (Abraham *et al.*, 2023). Therefore, rather than suggesting that PCE is irrelevant, these findings indicate that its influence may lie outside the guilt-based pathway tested here. It may instead operate through broader cognitive routes, such as perceived control or personal norms (Bamberg and Möser, 2007; White *et al.*, 2019; Andrade and Vieites, 2025).

Finally, the moderating role of MD further extends guilt-based models of sustainable consumption. The results show that MD weakens the positive relationship between AG and PI, indicating that even when individuals anticipate feeling guilty, this emotion does not always translate into action. This finding is consistent with MD theory, which suggests that individuals can cognitively justify or neutralize moral obligations (Bandura *et al.*, 1996; Moore *et al.*, 2012). In other words, consumers may rationalize unsustainable choices in ways that protect a positive self-image while weakening the link between guilt and PI (Bandura *et al.*, 1996; Bandura, 2002). This aligns with prior research suggesting that the effectiveness of moral emotions depends on whether they are psychologically accepted or defensively suppressed (Antonetti and Maklan, 2014).

### 5.2 Theoretical contributions

This study makes three main theoretical contributions. First, it refines guilt-based explanations of sustainable consumption by showing that sustainability-related beliefs do not uniformly intensify moral-emotional motivation. GT is found to reduce AG and simultaneously exert a positive direct effect on PI, revealing that belief-based drivers can operate through competing rather than purely reinforcing mechanisms (Truelove *et al.*, 2014; Grappi *et al.*, 2013). This finding extends the previous literature by demonstrating that sustainability-related beliefs may generate opposing psychological effects within the same decision process.

Second, this study advances our understanding of how internal- and external-actor sustainability beliefs differ not only conceptually but also in their motivational mechanisms. GT, an external-actor belief concerning the environmental credibility of firms, produced significant effects on both AG and PI, operating through a guilt-based pathway consistent with the object-specific responsibility attribution process described in the norm activation model (Chen, 2010; Onwezen *et al.*, 2014). This finding demonstrates that external-actor beliefs can activate guilt in a product-specific purchase context because they provide a concrete, brand-anchored reference point that is psychologically proximal to the consumption decision. The contribution of this study lies in this demonstrated asymmetry by establishing that GT, an external-actor belief operating at a lower construal level through a guilt-based motivational route and by showing that PCE, an internal-actor belief operating at a higher construal level, does not produce the same pattern (Trope and Liberman, 2010). Therefore, internal- and

external-actor beliefs reach consumers through fundamentally different psychological mechanisms. This distinction provides a theoretically principled basis for selecting antecedents in guilt-based sustainable consumption models and cautions against treating these two belief types as interchangeable motivational constructs.

Third, this study extends moral emotion research by identifying MD as a boundary condition that weakens the conversion of AG into PI (Bandura *et al.*, 1996; Moore *et al.*, 2012). This shows that moral emotions do not automatically translate into behavior but depend on whether they are cognitively sustained or neutralized. In doing so, the study also advances moral self-regulation theory by showing that the effectiveness of guilt depends not only on emotional activation itself but also on how consumers cognitively interpret, maintain or disengage from personal moral responsibility during ethical decision-making.

Overall, these contributions suggest that sustainable consumption is shaped by a dynamic interplay between cognitive beliefs, moral emotions and responsibility perceptions. Rather than operating independently, these elements reinforce, offset or neutralize each other, highlighting that the activation and behavioral impact of AG depend on how responsibility is interpreted, what type of belief triggers it and whether that responsibility is subsequently disengaged.

### 5.3 Managerial implications

The findings of this research offer several important implications for practitioners, particularly for firms operating in the sustainable fashion sector. First, managers should avoid assuming that strengthening GT will automatically lead to higher PI. While building trust in environmental claims remains important, the results suggest that overemphasizing firm responsibility may unintentionally reduce consumers' sense of personal moral obligation. This occurs because GT simultaneously produces two opposing effects: a positive direct effect through favorable evaluation and a negative indirect effect through reduced AG. To mitigate this unintended consequence, firms should balance trust-building messages with communication strategies that reinforce consumers' personal role in sustainability.

Second, marketing communication should be designed to manage the co-existence of cognitive and moral-emotional mechanisms rather than relying on a single persuasive route. Rather than focusing solely on credibility and transparency, campaigns should also highlight the consequences of inaction and the personal relevance of sustainable choices. For example, messages that combine information about firms' sustainability efforts with subtle cues about individual responsibility may help maintain AG at a motivating level without triggering defensive reactions. Such a dual approach helps prevent the crowding-out effect of moral motivation while still leveraging trust-based evaluation, thereby increasing the likelihood of sustainable purchase behavior.

Third, the moderating role of MD indicates that consumers may actively neutralize moral pressure even when they experience AG. Marketing strategies should therefore address not only motivation but also justification processes. Specifically, strategies that reduce MD, such as emphasizing collective responsibility, reinforcing social norms and making the impact of individual actions more visible, can strengthen the effectiveness of guilt-based appeals. Particularly, communications that make environmental consequences more immediate and personally relevant can reduce the likelihood that consumers disengage from moral responsibility.

Finally, the non-significant role of PCE suggests that increasing consumers' perceived effectiveness alone may not be sufficient to influence PI, particularly when it is not translated into emotional engagement. Firms should therefore complement efficacy-based messaging with strategies that connect consumers emotionally to sustainability issues. Rather than relying solely on rational appeals about individual impact, practitioners should integrate cognitive, emotional and moral elements, enabling communication strategies to be consistent with the complex psychological processes underlying sustainable consumption.

#### 5.4 Limitations and recommendations for future research

This study has a few limitations. First, its cross-sectional design and reliance on self-reported data limit causal inference and may not fully capture actual purchase behavior. Although procedural and statistical checks suggest that CMB is unlikely to be severe, future research could strengthen causal and external validity by using longitudinal, experimental or behavioral designs. Second, the purposive sampling strategy limits population-level generalizability, especially because recruitment through fashion-related Facebook groups may overrepresent consumers who are more engaged with apparel trends and sustainability-related discourse. Third, the study focuses on a single moral emotion, namely AG, as the central mediating mechanism. While this allows for a more focused examination of guilt-based motivation, future research should explore whether other moral emotions, such as anticipated pride, moral satisfaction or regret, may operate alongside or in interaction with guilt to capture a more complete emotional process. Fourth, GT was measured at a general level rather than being tied to specific brands or product categories. Given the findings that GT may simultaneously facilitate and weaken sustainable consumption through competing mechanisms, future research could examine how this dual effect varies across brand types, such as fast-fashion versus sustainability-oriented brands or across different levels of perceived credibility and transparency. Finally, this study did not directly measure construal level or psychological distance. Future research should test these mechanisms more explicitly to determine whether abstraction mismatch or other context-specific pathways explain when sustainability beliefs influence behavior. Such work would strengthen our understanding of how broad sustainability beliefs translate into specific consumption decisions.

In conclusion, the study highlights that sustainable apparel decisions are shaped by the interplay of cognitive beliefs, moral emotions and responsibility perceptions. Rather than operating independently, these mechanisms may reinforce, offset or neutralize each other, indicating that the effectiveness of guilt-based motivation depends on how responsibility is psychologically interpreted and whether moral emotions are sustained or cognitively neutralized.

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