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The Impact of Eco-anxiety on Green Consumption Behaviors and Escapism among Vietnamese GenZ: The Mediating Roles of Emotional Dissonance and Guilt & Regret

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Research Article

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Abstract

This study examines the psychological mechanisms by which eco-anxiety translates into green consumer behavior among Gen Z in Vietnam, drawing on Protection Motivation Theory and Cognitive Dissonance Theory. The study employed an online questionnaire to gather responses from 485 Gen Z participants, with the resulting dataset analyzed through PLS-SEM using SmartPLS. The results show that eco-anxiety does not significantly affect green consumer behavior, but it strongly influences emotional dissonance. This dissonance promotes both avoidance and green consumption. Guilt and regret have a positive but weak influence. The study suggests that businesses should shift from fear-mongering communication to concrete, positive action.

1. INTRODUCTION

Environmental issues such as climate change, global warming, and ozone depletion are currently ecological disasters that directly threaten humanity and ecosystems. A clear understanding of these disasters not only raises environmental alarms but also directly impacts people's mental health (Usher et al., 2019). Specifically, current environmental problems can cause anxiety, sleep disturbances, depression, and emotional instability, and lead to a psychological syndrome known as "eco-anxiety" or "eco-grief" (Cianconi et al., 2023). For environmentally conscious consumers, this anxiety leaves them feeling emotionally exhausted when contemplating the future of themselves, their families, and future generations (Coffey et al., 2021).

This natural instability often creates psychological discomfort and leads to emotional dissonance (Sharma & Paço, 2021). Based on the Protection Motivation Theory (PMT) (Rogers, 1975) and Cognitive Dissonance Theory (CDT) (Festinger, 1957), people have two tendencies to normalize these emotional disturbances: changing behavior or changing perception. When faced with environmental stress, some individuals often choose the simplest method: withdrawing from the situation instead of taking action to solve the problem, also known as escapism (Sun & Chang, 2021). Escape allows them to temporarily enter a state of isolation to forget the problem, thereby alleviating pressure and feelings of guilt. Conversely, some consumers attempt to address the challenge by developing an intention to purchase environmentally friendly products. Green shopping behavior gives them a sense of satisfaction for doing something to help the environment become better (Sharma et al., 2022); whereas not engaging in this behavior leads to unpleasant emotional experiences, such as guilt and remorse.

Study by Sharma et al. (2024) showed that responses to eco-anxiety differ significantly across regions with distinct cultural and socio-economic characteristics, particularly in Asian countries with high power distance and hierarchical power distribution (Brewer & Venaik, 2011). Based on that cultural foundation, in Vietnam, a developing country heavily impacted by climate change, Generation Z is emerging as a key consumer force with a deep awareness of sustainability (Ngo et al., 2025). But the impacts of eco-anxiety on the psychological and behavioral aspects of Gen Z in Vietnam have yet to be thoroughly researched.

As such, the current study examines a theory-based model of eco-anxiety and its impact on green consumption intentions within a survey sample primarily made up of Vietnamese Gen Z. In particular, the research seeks to achieve two concurrent goals: firstly, to examine the impact of eco-anxiety on the emotional distress and cognitive dissonance experienced by consumers. Secondly, to examine the repercussions of the aforementioned emotional dissonance through avoidance and green consumption behaviors. To better understand the psychological process involved, the construct of guilt and regret has been included in the model as a mediating variable.

2. THEORETICAL FRAMEWORK

The behavior of the consumer is a complicated process that is affected by cognitive, emotional, and motivational aspects. In order to understand the processes affecting the green consumer behavior of Gen Z consumers in Vietnam, this research integrates two theories: the Protection Motivation Theory (PMT) and the Cognitive Dissonance Theory (CDT). PMT explains how perceptions of environmental threats drive behavioral change, while CDT helps resolve the psychological conflicts and emotional responses that arise from inconsistencies between consumer perceptions and behavior. This combination allows for the simultaneous analysis of antecedent factors (ecological anxiety, emotional dissonance) and psychological-behavioral consequences (guilt and regret, avoidance, and green consumer behavior).

PMT was proposed by Rogers (1975) to address health protection activities and has since been extended to many other fields, including environmental protection (Kothe et al., 2019; Prentice-Dunn & Rogers, 1986). According to PMT, when individuals perceive the existence of a threat and assess its severity, they will develop a motivation to perform aggressive behaviors to mitigate or prevent negative consequences (Daryanto et al., 2022; Sattler et al., 2000). This process occurs through two main assessment mechanisms: threat assessment and response assessment (Kothe et al., 2019; Prentice-Dunn & Rogers, 1986). The higher the perceived level of danger of a threat and the individual's belief that their behavior can contribute to reducing risk, the stronger the intention to perform protective behavior (Pang et al., 2021). In research on green consumer behavior, PMT is a suitable theoretical framework for unleashing the motivation to participate in environmentally friendly activities (Kothe et al., 2019). For Gen Z consumers in Vietnam, awareness of environmental issues like climate change, environmental pollution, and depletion of natural resources can increase eco-anxiety (ecological anxiety) (Duy, 2025). This state of anxiety reflects awareness of environmental threats, thereby triggering emotional responses such as guilt and regret as individuals realize their consumption behavior may contribute to environmental damage (Mannan & Basu, 2026). According to PMT, these emotions motivate individuals to change their behavior, moving towards green consumption choices to minimize negative environmental impacts (Kothe et al., 2019).

CDT developed by Festinger (1962), it argues that people generally seek to preserve consistency between their beliefs, attitudes, perceptions, and subsequent behaviors. When inconsistencies arise between these elements, individuals experience a state of mental stress called cognitive dissonance,

thereby developing the capacity to restore balance by adjusting their perceptions or changing their behavior. In the area of consumer conduct, cognitive dissonance encompasses not only cognitive aspects but also emotional responses such as anxiety, regret, and guilt (Soutar & Sweeney, 2003; Sweeney et al., 2000). This theory has been widely applied to address the inconsistency between perceived environmental responsibility and actual consumer behavior (Thøgersen, 2004). When consumers understand how important it is to protect the environment but still maintain consumption behaviors that negatively impact the environment, they may experience emotional dissonance, creating feelings of discomfort and psychological pressure (Mukhtar et al., 2026).

In this research context, emotional dissonance is seen as the source of guilt and regret, and influences two different action responses. According to CDT, to mitigate the psychological discomfort associated with cognitive dissonance, consumers can choose one of two approaches. First, they change their behavior to better align with environmental values through increased green consumption. Second, they seek to avoid or minimize exposure to environmental information to reduce psychological pressure, potentially leading to avoidance (escapism) behavior. Therefore, CDT provides an important theoretical basis for addressing the emotional responses that lead to different behavioral choices with a particular focus on Generation Z consumers' engagement in sustainable consumption.

3. HYPOTHESES DEVELOPMENT AND RESEARCH FRAMEWORK

Climate change and environmental degradation have become major global concerns, leading to increased eco-anxiety among individuals (Qader et al., 2025). Eco-anxiety is understood as a state of prolonged anxiety, fear, and psychological stress stemming from awareness of environmental crises and uncertainty regarding the planet's future (Hogg et al., 2021; Pihkala, 2020). Rather than being regarded solely as a pathological condition, eco-anxiety is frequently conceptualized as a rational, adaptive emotional response to ecological threats (Kurth & Pihkala, 2022). Individuals experiencing eco-anxiety are often concerned not only about environmental degradation in general, but also regarding their perceived contribution to environmental degradation (Coffey et al., 2021). This can spur self-reflection on their daily consumption practices.

According to Festinger's Cognitive Dissonance Theory (1957), Psychological discomfort emerges when people see a lack of congruence between their beliefs, values, and behavioral practices. As consumers develop greater awareness of the severity of environmental issues but simultaneously engage in unsustainable consumption behaviors, they are likely to experience emotional dissonance. This dissonance is conceptualized as emotional dissonance, the unpleasant emotional state that arises when an individual's behavior is inconsistent with their environmental values and self-identity (Cancino-Montecinos et al., 2020; Johnson et al., 2021)

Individuals who experience greater levels of eco-anxiety tend to pay more attention to environmental consequences and are more aware of the incongruence between their environmental concerns and actual behavioral choices. Existing empirical evidence indicates that eco-anxiety and climate anxiety are

associated with repeated reflection on environmental crises, feelings of helplessness, psychological stress, and increased awareness of personal responsibility for ecological issues (Jarrett et al., 2024; Mosca et al., 2025). Furthermore, Verplanken & Roy (2013) suggest that ecological anxieties can lead individuals to re-evaluate their behavior from an environmental perspective, while Ojala (2023) emphasizes that negative emotions related to climate change can spur reflection on personal responsibility and action. Therefore, higher levels of eco-anxiety are associated with a greater likelihood that individuals perceive a conflict between their pro-environmental values and their actual consumption decisions, thereby increasing emotional dissonance. This strengthens the theoretical basis for the relationship between eco-anxiety and emotional dissonance.

Therefore, the following hypothesis is put forward:

H1. Eco-anxiety has a positive impact on emotional dissonance.

Eco-anxiety is not just a general concern for environmental degradation, but also encompasses anxiety about personal responsibility for ecological damage (Hogg et al., 2021). According to Hurst & Sintov (2022), Individuals who perceive themselves as contributing to environmental degradation often conduct self-assessments of their ethical choices, leading to guilt and regret over their consumption choices; these ethical feelings arise when individuals realize that their actions may conflict with environmental values and long-term sustainable development goals.

Guilt is considered a self-conscious ethical emotion that arises when individuals believe they have violated personal or social ethical norms (Steenhaut & Van Kenhove, 2006). Meanwhile, regret relates to the negative self-evaluation process that occurs after an individual compares a real decision with perceived alternatives (Dedeoğlu & Kazançoğlu, 2010).

According to CDT, the need for self-assessment becomes even more critical when people discover that there is a discrepancy between their environmental values and their consumption behavior (Festinger, 1957).

Within the broader framework of environmental psychology, studies suggest that awareness of environmental threats often triggers these emotions by increasing the sense of personal responsibility for environmental consequences (Böhm, 2003; Chan et al., 2024).

As a result, individuals who suffer from greater eco-anxiety internalize issues about the environment and take part responsibility based on their consumer behavior. Due to increased awareness, they are more likely to feel guilty or sorry about their previous actions.

Accordingly, the following hypothesis is formulated:

H2. Eco-anxiety has a positive impact on guilt and regret.

Emotional dissonance represents a condition involving psychological unease and tension arising from the inconsistency between an individual's internal beliefs and external behavior (Festinger, 1957). In the context of environmental consumption, emotional dissonance occurs when consumers are aware of the importance of environmental protection but continue to engage in behaviors that negatively impact the environment (Sadiq et al., 2026).

According to CDT, psychological discomfort resulting from such inconsistency motivates individuals to evaluate the causes and consequences of their behavior and seek ways to restore psychological consistency (Festinger, 1957). In environmental consumption, this self-evaluative process may generate moral emotions when consumers perceive that their behavior violates personally important environmental standards (Mammadli & Gigliarano, 2024). Thus, emotional dissonance can function as an antecedent of guilt and regret rather than merely representing a general negative emotional state (Frandsen et al., 2025).

Guilt is widely seen as a moral emotion that motivates individuals to correct inappropriate behaviors and restore consistency between personal values and practical actions (Mills & Groening, 2021). Similarly, regret reflects a feeling of dissatisfaction with past decisions and can motivate future behavioral change (Dedeoğlu & Kazançoğlu, 2010). Previous studies have shown that emotional dissonance often precedes feelings of guilt, as individuals tend to seek ways to alleviate the discomfort arising from conflicting perceptions and behaviors. (Gregory-Smith et al., 2013; Hopp et al., 2010; Ratcliffe, 2026)

As consumers experience stronger emotional dissonance, they become increasingly aware of the inconsistency between their environmental concerns and their actual consumption practices (Mukhtar et al., 2026).

In light of the above arguments, the following hypothesis is developed:

H3. Emotional dissonance positively affects guilt and regret.

Escapism refers to the behavioral tendency by which individuals attempt to avoid or psychologically distance themselves from unpleasant emotions and stressful situations (Darrat et al., 2016). According to Escape Theory, when individuals feel psychological discomfort becomes unbearable, they may choose avoidance behaviors to temporarily alleviate emotional stress, rather than directly confronting the core issue (Yi, 2012).

Environmental issues are often perceived as complex, uncertain, and difficult to resolve at the individual level (Kanzola et al., 2023). Moreover, consumers experiencing emotional dissonance may perceive environmental responsibility as a psychological burden, in previous studies have suggested that they may avoid environmental information, ignore messages related to sustainability, or withdraw from environmental discussions to lessen emotional discomfort (Mäkelä et al., 2026; Thøgersen, 2004).

Therefore, emotional dissonance may encourage consumers to adopt escapist coping strategies as a way to alleviate psychological conflict.

Accordingly, the study advances the following hypothesis:

H4. Emotional dissonance positively impacts escapism.

Although guilt and regret can motivate corrective behaviors, these emotions can also become psychologically overwhelming when individuals feel they have limited ability to change their circumstances (Mäkelä et al., 2026; Thøgersen, 2004).

This two-fold function of negative emotions aligns with the Escape Theory, which argues that people may employ an avoidant coping mechanism if negative self-awareness is too hard to bear (Yi, 2012). In such situations, people may prefer to indulge in short-term pleasure than face the ecological impact of their consumption practices (Maduku, 2024). Given these circumstances, people can develop avoidance coping mechanisms to reduce emotional distress (Sharma & Paço, 2021).

Escapism allows consumers to temporarily suppress or ignore the unpleasant emotions associated with environmentally harmful behaviors (Darrat et al., 2016; Orazi et al., 2023). Instead of directly confronting guilt and regret, individuals may avoid environmental information or refrain from participating in sustainable consumption decisions to protect their own psychological state (Culiberg et al., 2023). Evidence from the extant literature suggests that avoidance can serve as a regulatory mechanism for emotions when negative feelings become difficult to control (Kim & Newman, 2022; Schell et al., 2023).

Therefore, the greater the guilt and regret, the more the individual is prone to indulging in escapist behavior.

Based on the above analysis, the following hypothesis has been developed:

H5. Guilt and regret positively influence escapism.

Guilt and regret have long been considered important moral emotions capable of motivating ethical and environmentally responsible behavior (Tangney et al., 2007). Guilt motivates individuals to correct the negative consequences of past actions and restore consistency between moral values and actual behavior (Tracy & Robins, 2007). Similarly, regret encourages consumers to make better decisions in future consumption situations by learning from past mistakes (Dedeoğlu & Kazançoğlu, 2010).

This argument is consistent with CDT (Festinger, 1957), thereby suggesting that individuals strive to alleviate psychological discomfort by modifying behaviors that are inconsistent with their values. In this context, green consumption can serve as a behavioral mechanism through which consumers restore consistency between their environmental values and consumption practices (Wang et al., 2021).

In an environmental context, consumers who experience guilt for environmentally harmful purchases tend to choose more sustainable alternatives to compensate for their previous behavior (Mukherjee & Chandra, 2021). In the previous studies, green consumption behavior can be seen as a form of behavioral compensation, through which consumers strive to reduce psychological discomfort while

adjusting their actions to better align with environmental values (Barbeta-Viñas, 2023; Haj-Salem et al., 2022; Hurst & Sintov, 2022). Accordingly, consumers experiencing heightened levels of guilt and regret are expected to demonstrate stronger engagement in green consumption behavior.

Building upon the preceding arguments, the following hypothesis is formulated:

H6. Guilt and regret positively influence green consumption behavior.

Eco-anxiety can therefore be viewed as an affective response associated with heightened awareness of environmental threats, which may increase individuals' motivation to adopt behaviors perceived as capable of reducing environmental harm (Kühner et al., 2025). However, PMT also implies that threat-related emotions alone are insufficient to guarantee protective behavior; people are more inclined to take action when they believe the response as effective and believe they are capable of performing it (Kothe et al., 2019; Rogers, 1975).

Empirical studies also support this relationship. Ogunbode et al. (2022) showed that participation in pro-environmental activities is positively correlated with higher levels of climate anxiety and environmental activism in a cross-national study. Similarly, Lutz et al. (2023) found that eco-anxiety at both the individual and daily-trait levels is associated with higher levels of pro-environmental behavior. More recently, Kerse & Kerse (2025) also indicates that eco-anxiety can drive environmentally friendly behaviors such as green product purchasing, recycling, and low-carbon behavior.

According to CDT, eco-anxiety can also stem from a disconnect between perceptions of environmental responsibility and actual consumer behavior (Festinger, 1957). To alleviate this psychological tension, consumers tend to adjust their behavior to better align with ecological values.

Hence, the study proposes the following hypothesis:

H7. Eco-anxiety enhances consumers’ propensity to engage in green consumption behavior.

From the perspective of CDT, discrepancies between attitudes and behaviors motivate individuals to adjust either their beliefs or subsequent behaviors (Festinger, 1957). In the context of environmental consumption, consumers experiencing emotional dissonance can restore psychological consistency by adopting more environmentally responsible consumption behaviors (Enginkaya & Hayrun Sağlam, 2025).

More specifically, emotional dissonance highlights the discrepancy between consumers' environmental self-concept and their actual consumption practices (Xue et al., 2023). When consumers are motivated to reduce this discrepancy, changing consumption behavior may represent a more direct strategy than changing deeply held environmental values. Green consumption therefore provides an opportunity to restore consistency between environmental identity and actual behavior while simultaneously reducing psychological discomfort (Wiśniewska, 2025).

Previous studies have shown that anticipated emotional discomfort can serve as a significant motivator for environmentally supportive decision-making (Thøgersen, 2004; Wang et al., 2022; Xue et al., 2023; Yang & Su, 2026). Green consumption behavior gives individuals the opportunity to reduce emotional conflict by adjusting their purchasing decisions to better align with their environmental values (Eunike et al., 2025). Therefore, consumers experiencing stronger emotional dissonance may become more willing to purchase environmentally friendly products to alleviate their psychological discomfort (Gorissen et al., 2024).

On this basis, the following hypothesis is developed:

H8. Emotional dissonance positively impacts green consumption behavior.

"Insert Fig. 1 here"

4. METHODOLOGY

4.1. Research Design and Sampling

A cross-sectional quantitative survey approach has been applied in the study in order to test the proposed relationships between ecological anxiety, emotional dissonance, guilt and regret, avoidance behavior, and green consumption behavior. The use of this approach is consistent with the collection of data at a certain point in time, hence representing the perceptions, emotions and behavioral patterns of young consumers in the context of the growing urgency of environmental issues and climate change.

Data was collected from 485 valid observations from the Gen Z population, showing that the sample used in this research is focused on young consumers in Vietnam. This population group is highly exposed to environmental information via digital media and is regarded as an important consumer group in terms of sustainable consumption.

A structured online questionnaire has been used to collect data using convenience and diffusion sampling approaches. The questionnaire was sent via Facebook, Instagram, Zalo, online student forums, and internal university email systems. In order to decrease the effect of social desirability bias, respondents were provided with detailed information regarding the goals of the study, its voluntary nature, scientific purposes of the data usage, and assurance of its confidentiality.

4.2. Measurement Scales

All constructs in the research model have been measured using multivariate scales, which have been developed based on past studies to ensure that there is theoretical backing for the survey environment in Vietnam. All questions in the questionnaire have been measured using a five-point Likert scale, which had ratings ranging from 1, strongly disagree, to 5, strongly agree. Specifically, Eco-anxiety (EA) includes 13 observed variables inherited from Hogg et al. (2021); Emotional Dissonance (ED) includes 15 variables based on Soutar & Sweeney (2003); Escapism (ESP) is adapted from Darrat et al. (2016); Guilt

and regret (GR) includes 3 variables based on Sharma et al. (2024); and Green consumption behaviors (GCB) include 5 variables adapted from original 4 variables from Emekci (2019). These scales reflect consumers' emotional, cognitive, and behavioral states regarding climate change, environmental degradation, and sustainable consumption choices.

4.3. Data Analysis Method

The approach in this study is a mixed-method approach where the qualitative part was used to contextualize and fine-tune the measurement tools for the Vietnamese context. Scales have been borrowed from other studies and adjusted in terms of language and content so that the respondents would be able to understand the statements on Eco-anxiety (EA), Emotional Dissonance (ED), Escapism (ESP), Guilt and Regret (GR), and Green Consumption Behaviors (GCB).

For collecting quantitative data, an online survey via Google Forms was applied with a convenient sampling approach. The respondents are Gen Z consumers from Vietnam familiar with the environmental problems, climate change, and sustainable consumption. For distribution of the questionnaire, some social media platforms and online communities have been used. For screening the respondents, the questions have been asked to confirm that the respondent is Gen Z and can evaluate the statements of the study.

The collected data have been analyzed using PLS-SEM in SmartPLS to measure the measurement and structural models, reliability, scale validity, research hypotheses, and the model (Benitez et al., 2020; Hair et al., 2019, 2022).

5. RESULT

5.1. Descriptive Analysis

Table 1 illustrates the demographic features of 485 Gen Z individuals according to gender, level of education, and monthly income. It can be seen that the sample selected for the survey includes mainly females who obtained university or bachelor’s degrees and have monthly income under 10 million VND.

"Insert Table 1 here"

5.2. Measurement model

Table 2 gives an overview of the findings concerning internal consistency reliability and convergent validity in the process of measurement model evaluation. Loadings of the outer measurements of all indicators were above 0.70, having varied from 0.800 to 0.883, which means the level of indicator reliability was satisfactory. From the indicators, GRCB4 was the one that had the least loading (0.800) while EA1 had the greatest loading (0.883). There was also satisfactory internal consistency in the constructs since Cronbach’s Alpha values varied from 0.794 to 0.892 and CR values varied from 0.879 to 0.925, which are more than the acceptable level of 0.70. In addition, the values of AVE ranged from 0.671

to 0.755, exceeding 0.50. Taken together, these findings provide evidence that the measurement scales demonstrate adequate reliability and convergent validity, consistent with established methodological guidelines by Hair et al. (2019, 2022), thus making them suitable for further testing of discriminant validity and structural model.

"Insert Table 2 here"

Table 3 shows the discriminant validity of constructs based on heterotrait-monotrait (HTMT) ratio. Hair et al. (2019, 2022) suggest that values less than 0.85 are indicative of adequate discriminant validity between the constructs. For the current study, the values of HTMT ratio are between 0.602 and 0.793, all of which are below the threshold values. The highest HTMT ratio is obtained in the case of EA and ED, but even this ratio satisfies the acceptable criteria. Therefore, it may be concluded that constructs have sufficient empirical distinctiveness, hence discriminant validity.

"Insert Table 3 here"

5.3. Structural model

Before testing the hypothesized relationships, the collinearity between the predictor constructs was analyzed with respect to the variance inflation factor (VIF). From the results in Table 4, it is clear that the VIF values are below 3.3 for all constructs. It can be stated that there is no issue of multicollinearity and hence the structural model is ready for evaluation (Kock, 2015).

"Insert Table 4 here"

Table 5 reports the hypothesis-testing results based on bootstrapped path coefficients (β), t-values, p-values, and 95% confidence intervals, following Hair et al. (2019, 2022). Seven of the eight hypotheses are supported. EA has a strong positive effect on ED (H1: $\beta = 0.707$, $t = 32.140$, $p < 0.001$, 95% CI [0.660, 0.747], $f^2 = 1.001$), representing the largest effect in the model. EA also positively affects GR (H2: $\beta = 0.383$, $t = 8.860$, $p < 0.001$, 95% CI [0.296, 0.466], $f^2 = 0.136$), while ED positively affects GR (H3: $\beta = 0.351$, $t = 8.470$, $p < 0.001$, 95% CI [0.270, 0.433], $f^2 = 0.114$).

For ESC, both ED (H4: $\beta = 0.472$, $t = 11.888$, $p < 0.001$, 95% CI [0.393, 0.549], $f^2 = 0.249$) and GR (H5: $\beta = 0.268$, $t = 6.214$, $p < 0.001$, 95% CI [0.181, 0.351], $f^2 = 0.080$) show significant positive effects. GR also positively influences GRCB (H6: $\beta = 0.189$, $t = 3.949$, $p < 0.001$, 95% CI [0.093, 0.278], $f^2 = 0.035$). However, the direct effect of EA on GRCB is not significant (H7: $\beta = 0.091$, $t = 1.899$, $p = 0.058$, 95% CI [-0.006, 0.184], $f^2 = 0.007$), whereas ED has a significant positive effect on GRCB (H8: $\beta = 0.457$, $t = 10.183$, $p < 0.001$, 95% CI [0.370, 0.544], $f^2 = 0.167$).

Based on Cohen's (1988) criteria, the effects of ED → ESC and ED → GRCB are medium, whereas the remaining significant effects are small, except for the very large effect of EA → ED ($f^2 = 1.001$). The adjusted R^2 values indicate that the model explains 49.9% of the variance in ED, 45.7% in GR, 44.9% in

ESC, and 43.7% in GRCB. In addition, all Q^2 values are positive (0.343, 0.320, 0.325, and 0.292, respectively), indicating predictive relevance for the endogenous constructs.

Overall, seven hypotheses are supported, while H7 is not supported. The findings indicate that eco-anxiety has a substantial relationship with emotional dissonance and is also positively related to guilt/regret. However, its direct relationship with green consumption behavior is not statistically significant, suggesting that the relationship between eco-anxiety and green consumption may involve intervening psychological or emotional mechanisms.

"Insert Table 5 here"

Table 6 reports the indirect effects and provides evidence for the mediating roles of ED and GR. Following established PLS-SEM guidelines (Hair et al., 2019, 2022), mediation was assessed using bootstrapped indirect effects and confidence intervals, consistent with the approach of Preacher & Hayes (2008). EA shows significant indirect effects on ESC ($\beta = 0.503$, $p < 0.001$), GR ($\beta = 0.248$, $p < 0.001$), and GRCB ($\beta = 0.442$, $p < 0.001$), while ED significantly mediates effects on ESC ($\beta = 0.094$, $p < 0.001$) and GRCB ($\beta = 0.066$, $p = 0.001$).

For ESC, the strongest specific indirect pathway is EA → ED → ESC ($\beta = 0.334$, $p < 0.001$), followed by EA → GR → ESC ($\beta = 0.103$, $p < 0.001$) and the sequential pathway EA → ED → GR → ESC ($\beta = 0.066$, $p < 0.001$). For GRCB, EA → ED → GRCB has the largest indirect effect ($\beta = 0.323$, $p < 0.001$), exceeding the pathways through GR alone ($\beta = 0.072$, $p < 0.001$) and sequentially through ED and GR ($\beta = 0.047$, $p = 0.001$).

Overall, ED emerges as the dominant mediator, particularly for GRCB, whereas GR provides a complementary mediating pathway. These findings suggest that the relationship between EA and green consumption behavior is primarily transmitted through intervening psychological and emotional mechanisms (Hair et al., 2019, 2022; Preacher & Hayes, 2008).

"Insert Table 6 here"

6. DISCUSSION

This study applies PMT and CDT to clarify how eco-anxiety influences the green consumption behavior of Gen Z through emotional dissonance, guilt and regret, and avoidance behavior. The results show that eco-anxiety positively impacts emotional dissonance, while simultaneously increasing feelings of guilt and regret. This suggests that as young consumers become more aware of climate change, environmental degradation, and personal responsibility, They are more prone to psychological strain and moral self-assessment related to their consumption behavior (Hogg et al., 2021; Ojala, 2023; Pihkala, 2020).

The results also confirm the central role of emotional dissonance in the research model. When Environmental values are inconsistent with one another and actual consumer behavior, consumers can

reduce psychological distress in two ways: avoiding environmental information or engaging in green consumption to restore consistency between awareness and action (Festinger, 1957, 1962). Furthermore, guilt and regret have a positive impact on both avoidance and green consumption. However, the impact on green consumption is relatively weak, suggesting that while moral emotions play a motivating role, they are not strong enough without supporting conditions such as access to green products, reasonable prices, product trust, perceived effectiveness, and social norms (Hurst & Sintov, 2022; Mukherjee & Chandra, 2021). Simultaneously, when psychological pressure is too great, consumers may avoid environmental information as a self-protective mechanism (Darrat et al., 2016; Sharma & Paço, 2021).

Overall, the green consumption behavior of Gen Z in Vietnam is influenced not only by rational environmental perceptions but also by negative emotional experiences. Ecological anxiety creates emotional dissonance and guilt; emotional dissonance fuels both avoidance and green consumption; while guilt and regret play a supporting role but are not the strongest factors. In practice, environmental communication campaigns for Gen Z should not rely solely on fear or guilt, but should combine warnings about the severity of the problem with specific, feasible, and easily implementable solutions.

The study still has some limitations. First, focusing on Gen Z in Vietnam may limit the ability to generalize to other age groups or cultural contexts. Second, the study primarily examines negative emotions, while factors such as hope, perceived effectiveness, environmental identity, or social norms have not been fully analyzed. Third, the relationships between eco-anxiety, avoidance, and green consumption may change over time, so future studies should use more diverse longitudinal designs and samples, and apply multi-group analysis to examine demographic differences.

7. CONCLUSION

This study proves the feasibility of an integrated framework that includes both the PMT model and the CDT model to explain the formation mechanisms of green consumers in the Gen Z generation in Vietnam. According to 485 valid observations obtained from Gen Z, the findings prove that negative emotions about the environment not only generate psychological pressure but also turn into green consumer behavior.

In particular, ecological anxiety is a notable trigger that highly influences emotional imbalance and guilt and regret. It can be said that as Generation Z becomes increasingly aware of environmental degradation and climate change, they are prone to experiencing internal stress and guilt for not doing enough for the environment.

The concept of emotional dissonance is one that is quite significant in this particular model, for not only does it facilitate an avoidance behavior, but it also affects the green consumption behavior. It appears, therefore, that the consumer will respond in two ways at the same time.

Regret and guilt have the least but most positive effect on green buying behavior. This means that moral appeal alone will not lead to action unless there are certain conditions in place, such as availability of green products, affordable prices, assurance of quality, and openness in business dealings.

Among the important findings of the study is that there is no impact of avoidance on environment awareness as it has a positive influence on green consumption behaviors. It is possible that avoidance is a temporary response among the members of Gen Z to ensure psychological well-being in relation to environmental information overload. Thus, green consumption might follow as an attempt to reclaim control of one's actions.

8. LIMITATION AND FURTHER RESEARCH

There are some limitations to the study. Firstly, non-probability sampling methods such as convenience sampling and online snowball sampling have been used in order to collect data. In order to get better results, future studies should employ probabilistic sampling with a more varied sample including rural consumers, various income groups and older generations.

Secondly, the use of cross-sectional design does not allow for proving causation because it only demonstrates the relationship between variables at a certain point in time. Longitudinal or experimental design should be used in the following studies to trace changes in eco-anxiety, emotional disharmony and green consumer behavior.

Thirdly, the study relies on self-reported data that can be influenced by personal biases or social prejudice. Future research can employ a mixed-methods approach combining focus groups or in-depth interviews with surveys in order to better understand the psychological processes involved in green consumer behavior.

Fourth, green consumer behavior in this study is assessed at a general level. The following studies should examine the model in terms of specific product categories such as vegan cosmetics, sustainable fashion, organic food or electric vehicles.

Finally, the model could be expanded by adding variables such as collectivism, power distance, social norms, greenwashing, green skepticism, practical environmental knowledge, and price barriers. These factors could enhance the model's explanatory power in the context of green consumption in emerging economies.

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Author Contribution

The author confirms sole responsibility for the following: study conception and design, data collection, analysis and interpretation of results, and manuscript preparation

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

1. Barbeta-Viñas M (2023) Guilt and differentiation in social discourses on green consumption in Spain. Consum Markets Cult 26(1):1–23. https://doi.org/10.1080/10253866.2022.2107513
2. Benitez J, Henseler J, Castillo A, Schuberth F (2020) How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. Inf Manag 57(2):103168. https://doi.org/10.1016/j.im.2019.05.003
3. Böhm G (2003) Emotional reactions to environmental risks: Consequentialist versus ethical evaluation. J Environ Psychol Restor Environ 23(2):199–212. https://doi.org/10.1016/S0272-4944(02)00114-7
4. Brewer P, Venaik S (2011) Individualism–Collectivism in Hofstede and GLOBE. J Int Bus Stud 42(3):436–445. https://doi.org/10.1057/jibs.2010.62
5. Cancino-Montecinos S, Björklund F, Lindholm T (2020) A General Model of Dissonance Reduction: Unifying Past Accounts via an Emotion Regulation Perspective. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.540081
6. Chan SHM, Leung AK, -y, Ng ST (2024) Regret about environmental destruction: Examining the relative strengths of affective regret and cognitive regret in promoting pro-environmental behaviors. J Environ Psychol 100:102487. https://doi.org/10.1016/j.jenvp.2024.102487

7. Cianconi P, Hanife B, Grillo F, Betro' S, Lesmana CBJ, Janiri L (2023) Eco-emotions and Psychoterratic Syndromes: Reshaping Mental Health Assessment Under Climate Change. Yale J Biol Med 96(2):211–226. https://doi.org/10.59249/EARX2427
8. Coffey Y, Bhullar N, Durkin J, Islam MS, Usher K (2021) Understanding Eco-anxiety: A Systematic Scoping Review of Current Literature and Identified Knowledge Gaps. J Clim Change Health 3:100047. https://doi.org/10.1016/j.joclim.2021.100047
9. Cohen J (1988) Statistical Power Analysis for the Behavioral Sciences, 2nd edn. Routledge. https://doi.org/10.4324/9780203771587
10. Culiberg B, Cho H, Kos Koklic M, Zabkar V (2023) The Role of Moral Foundations, Anticipated Guilt and Personal Responsibility in Predicting Anti-consumption for Environmental Reasons. J Bus Ethics 182(2):465–481. https://doi.org/10.1007/s10551-021-05016-7
11. Darrat AA, Darrat MA, Amyx D (2016) How impulse buying influences compulsive buying: The central role of consumer anxiety and escapism. J Retailing Consumer Serv 31:103–108. https://doi.org/10.1016/j.jretconser.2016.03.009
12. Daryanto A, Song Z, Soopramanien D (2022) The COVID-19 pandemic as an impetus for pro-environmental behaviours: The role of causal attribution. Pers Indiv Differ 187:111415. https://doi.org/10.1016/j.paid.2021.111415
13. Dedeoğlu AÖ, Kazançoğlu İ (2010) The feelings of consumer guilt: A phenomenological exploration. J Bus Econ Manage 11(3):462–482. https://doi.org/10.3846/jbem.2010.23
14. Duy NH (2025) *How eco-anxiety and environmental concern influence on consumer's intentions toward green products: A value-based system perspective*. https://digital.lib.ueh.edu.vn/handle/UEH/75466
15. Emekci S (2019) Green consumption behaviours of consumers within the scope of TPB. J Consumer Mark 36(3):410–417. https://doi.org/10.1108/JCM-05-2018-2694
16. Enginkaya E, Hayrun Sağlam M (2025) Navigating Sustainability: The Role of Consumer Psychology in Shaping Sustainable Behavior. Sage Open 15(4):21582440251376481. https://doi.org/10.1177/21582440251376481
17. Eunike IJ, Silalahi ADK, Phuong DTT, Tedjakusuma AP (2025) Towards a holistic model of green consumerism by integrating ethical obligations, collective efficacy, and environmental concerns in sustainable purchase behavior. Sustainable Futures 9:100746. https://doi.org/10.1016/j.sftr.2025.100746
18. Festinger L (1957) A Theory of Cognitive Dissonance. Stanford University Press. https://doi.org/doi:10.1515/9781503620766
19. Festinger L (1962) Cognitive Dissonance. Sci Am 207(4):93–106. https://doi.org/https://doi.org/10.1038/scientificamerican1062-93
20. Frandsen S, Grant J, Kärreman D (2025) Working with pride in the shadow of shame: Emotional dissonance and identity work during a corporate scandal. Hum Relat 78(1):3–31. https://doi.org/10.1177/00187267241227819

21. Gorissen K, Deltomme B, Weijters B, Baumgartner H (2024) Proud to limit the damage: Negatively framed eco-ratings motivate green intentions through anticipated pride. J Environ Psychol 96:102290. https://doi.org/10.1016/j.jenvp.2024.102290
22. Gregory-Smith D, Smith A, Winklhofer H (2013) Emotions and dissonance in 'ethical' consumption choices. J Mark Manage 29(11–12):1201–1223. https://doi.org/10.1080/0267257X.2013.796320
23. Hair JF, Hult GTM, Ringle C, Sarstedt M (2022) *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*
24. Hair JF, Risher JJ, Sarstedt M, Ringle CM (2019) When to use and how to report the results of PLS-SEM. Eur Bus Rev 31(1):2–24. https://doi.org/10.1108/EBR-11-2018-0203
25. Haj-Salem N, Ishaq MI, Raza A (2022) How anticipated pride and guilt influence green consumption in the Middle East: The moderating role of environmental consciousness. J Retailing Consumer Serv 68:103062. https://doi.org/10.1016/j.jretconser.2022.103062
26. Hogg TL, Stanley SK, O'Brien LV, Wilson MS, Watsford CR (2021) The Hogg Eco-Anxiety Scale: Development and validation of a multidimensional scale. Glob Environ Change 71:102391. https://doi.org/10.1016/j.gloenvcha.2021.102391
27. Hopp H, Rohrmann S, Zapf D, Hodapp V (2010) Psychophysiological effects of emotional dissonance in a face-to-face service interaction. Anxiety Stress Coping 23(4):399–414. https://doi.org/10.1080/10615800903254091
28. Hurst KF, Sintov ND (2022) Guilt consistently motivates pro-environmental outcomes while pride depends on context. J Environ Psychol 80:101776. https://doi.org/10.1016/j.jenvp.2022.101776
29. Jarrett J, Gauthier S, Baden D, Ainsworth B, Dorey L (2024) Eco-anxiety and climate-anxiety linked to indirect exposure: A scoping review of empirical research. J Environ Psychol 96:102326. https://doi.org/10.1016/j.jenvp.2024.102326
30. Johnson O, Seifert C, Lee A (2021) Shopping without the fuss: The effect of curation type in clothing subscription adoption on cognitive dissonance and consumer responses. Int J Retail Distribution Manage 49(10):1411–1429. https://doi.org/10.1108/IJRDM-07-2020-0282
31. Kanzola A-M, Papaioannou K, Petrakis PE (2023) Environmental behavioral perceptions under uncertainty of alternative economic futures. Technol Forecast Soc Chang 190:122428. https://doi.org/10.1016/j.techfore.2023.122428
32. Kerse Y, Kerse G (2025) The effect of eco-anxiety on pro-environmental behaviors and mental well-being: A parallel mediation model. BMC Psychol 13(1):1155. https://doi.org/10.1186/s40359-025-03501-6
33. Kim H, Newman MG (2022) Avoidance of negative emotional contrast from worry and rumination: An application of the Contrast Avoidance Model. J Behav Cogn Therapy 32(1):33–43. https://doi.org/10.1016/j.jbct.2021.12.007
34. Kock N (2015) Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach. Int J E-Collaboration (IJeC) 11(4):1–10. https://doi.org/10.4018/ijec.2015100101

35. Kothe EJ, Ling M, North M, Klas A, Mullan BA, Novoradovskaya L (2019) Protection motivation theory and pro-environmental behaviour: A systematic mapping review. Australian J Psychol 71(4):411–432. https://doi.org/10.1111/ajpy.12271
36. Kühner C, Gemmecke C, Hüffmeier J, Zacher H (2025) Climate change anxiety: A meta-analysis. Glob Environ Change 93:103015. https://doi.org/10.1016/j.gloenvcha.2025.103015
37. Kurth C, Pihkala P (2022) Eco-anxiety: What it is and why it matters. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.981814
38. Lutz PK, Zelenski JM, Newman DB (2023) Eco-anxiety in daily life: Relationships with well-being and pro-environmental behavior. Curr Res Ecol Social Psychol 4:100110. https://doi.org/10.1016/j.cresp.2023.100110
39. Maduku DK (2024) How environmental concerns influence consumers' anticipated emotions towards sustainable consumption: The moderating role of regulatory focus. J Retailing Consumer Serv 76:103593. https://doi.org/10.1016/j.jretconser.2023.103593
40. Mäkelä H, Apostol O, Vinnari E (2026) Coping with cognitive dissonance in critical environmental accounting research and education. Crit Perspect Acc 103:102840. https://doi.org/10.1016/j.cpa.2025.102840
41. Mammadli R, Gigliarano C (2024) Does pro-environmental consumption contribute to subjective well-being? Empirical evidence from Italy. Socio-Economic Plann Sci 95:101969. https://doi.org/10.1016/j.seps.2024.101969
42. Mannan PM, Basu S (2026) Understanding eco-anxiety and lived experiences of young adults in India about climate change- A qualitative study. J Clim Change Health 27:100629. https://doi.org/10.1016/j.joclim.2025.100629
43. Mills P, Groening C (2021) The role of social acceptability and guilt in unethical consumer behavior: Following the crowd or their own moral compass? J Bus Res 136:377–388. https://doi.org/10.1016/j.jbusres.2021.07.021
44. Mosca A, Luciani D, Chiappini S, Miuli A, PsyClimate Research Group, Cianconi P, Pettorruso M, Janiri L, Martinotti G (2025) Eco-Anxiety and Mental Health: Correlates of Climate Change Distress. Int J Environ Res Public Health 22(12):1768. https://doi.org/10.3390/ijerph22121768
45. Mukherjee B, Chandra B (2021) Unravelling the differential effects of pride and guilt along with values on green intention through environmental concern and attitude. Kybernetes 51(7):2273–2304. https://doi.org/10.1108/K-04-2021-0336
46. Mukhtar B, Hussain A, Hollebeek LD, Arli D (2026) What drives sustainable consumption behavior? Empirical evidence from a three-stage hybrid analysis incorporating bibliometric, PLS-SEM, and NCA evidence. J Retailing Consumer Serv 93:104870. https://doi.org/10.1016/j.jretconser.2026.104870
47. Ngo Q-H, Nguyen T-D, Phan N-B (2025) Exploring green purchasing intentions and behaviours among Vietnamese Generation Z: A perspective from the theory of planned behaviour. PLoS ONE 20(5):e0323879. https://doi.org/10.1371/journal.pone.0323879

48. Ogunbode CA, Doran R, Hanss D, Ojala M, Salmela-Aro K, van den Broek KL, Bhullar N, Aquino SD, Marot T, Schermer JA, Wlodarczyk A, Lu S, Jiang F, Maran DA, Yadav R, Ardi R, Chegeni R, Ghanbarian E, Zand S, Karasu M (2022) Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. J Environ Psychol 84:101887. https://doi.org/10.1016/j.jenvp.2022.101887
49. Ojala M (2023) Hope and climate-change engagement from a psychological perspective. Curr Opin Psychol 49:101514. https://doi.org/10.1016/j.copsyc.2022.101514
50. Orazi DC, Mah Y, Derksen K, T., Murray KB (2023) Consumer escapism: Scale development, validation, and physiological associations. J Bus Res 160:113805. https://doi.org/10.1016/j.jbusres.2023.113805
51. Pang SM, Tan BC, Lau TC (2021) Antecedents of Consumers' Purchase Intention towards Organic Food: Integration of Theory of Planned Behavior and Protection Motivation Theory. Sustainability 13(9):5218. https://doi.org/10.3390/su13095218
52. Pihkala P (2020) Eco-Anxiety and Environmental Education. Sustainability 12(23):10149. https://doi.org/10.3390/su122310149
53. Preacher KJ, Hayes AF (2008) Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behav Res Methods 40(3):879–891. https://doi.org/10.3758/BRM.40.3.879
54. Prentice-Dunn S, Rogers RW (1986) Protection Motivation Theory and preventive health: Beyond the Health Belief Model. Health Educ Res 1(3):153–161. https://doi.org/10.1093/her/1.3.153
55. Qader MQ, Ayanlade O, 'Seun, Ali AN, Stuhlhofer EW, Blbas HTA, Saber AF, Ayanlade A (2025) Climate change anxiety and its effect on emotional and functional health: Regional analysis. Acta Psychol 260:105724. https://doi.org/10.1016/j.actpsy.2025.105724
56. Ratcliffe M (2026) Emotional Self-Dissonance. Emot Rev 17540739261422949. https://doi.org/10.1177/17540739261422949
57. Rogers RW (1975) A Protection Motivation Theory of Fear Appeals and Attitude Change. J Psychol 91(1):93–114. https://doi.org/10.1080/00223980.1975.9915803
58. Sadiq M, Fazal-e-Hasan SM, Ahmadi H, Mortimer G, Murdy S, Dann S (2026) Consumer hope and sustainable consumption: Integrating structural and configurational insights. J Retailing Consumer Serv 88:104514. https://doi.org/10.1016/j.jretconser.2025.104514
59. Sattler DN, Kaiser CF, Hittner JB (2000) Disaster Preparedness: Relationships Among Prior Experience, Personal Characteristics, and Distress. J Appl Soc Psychol 30(7):1396–1420. https://doi.org/10.1111/j.1559-1816.2000.tb02527.x
60. Schell V, De France K, Lin L, Hollenstein T (2023) The role of avoidance in understanding emotional dysfunction associated with a fixed emotion mindset. Pers Indiv Differ 201:111945. https://doi.org/10.1016/j.paid.2022.111945
61. Sharma N, Lal M, Goel P, Sharma A, Rana NP (2022) Being socially responsible: How green self-identity and locus of control impact green purchasing intentions? J Clean Prod 357:131895.

https://doi.org/10.1016/j.jclepro.2022.131895

62. Sharma N, Paço A (2021) Moral disengagement: A guilt free mechanism for non-green buying behavior. J Clean Prod 297:126649. https://doi.org/10.1016/j.jclepro.2021.126649
63. Sharma N, Paço A, Rocha RG, Palazzo M, Siano A (2024) Examining a theoretical model of eco-anxiety on consumers' intentions towards green products. Corp Soc Responsib Environ Manag 31(3):1868–1885. https://doi.org/10.1002/csr.2670
64. Soutar GN, Sweeney JC (2003) Are There Cognitive Dissonance Segments? Aust J Manage 28(3):227–249. https://doi.org/10.1177/031289620302800301
65. Steenhaut S, Van Kenhove P (2006) The Mediating Role of Anticipated Guilt in Consumers' Ethical Decision-Making. J Bus Ethics 69(3):269–288. https://doi.org/10.1007/s10551-006-9090-9
66. Sun J-J, Chang Y-J (2021) Associations of Problematic Binge-Watching with Depression, Social Interaction Anxiety, and Loneliness. Int J Environ Res Public Health 18(3):1168. https://doi.org/10.3390/ijerph18031168
67. Sweeney JC, Hausknecht D, Soutar GN (2000) Cognitive dissonance after purchase: A multidimensional scale. Psychol Mark 17(5):369–385. https://doi.org/10.1002/(SICI)1520-6793)17:5%3C369::AID-MAR1%3E3.0.CO;2-G
68. Tangney JP, Stuewig J, Mashek DJ (2007) Moral Emotions and Moral Behavior. *Annual Review of Psychology*, *58*(Volume 58, 2007), 345–372. https://doi.org/10.1146/annurev.psych.56.091103.070145
69. Thøgersen J (2004) A cognitive dissonance interpretation of consistencies and inconsistencies in environmentally responsible behavior. J Environ Psychol 24(1):93–103. https://doi.org/10.1016/S0272-4944(03)00039-2
70. Tracy JL, Robins RW (2007) The psychological structure of pride: A tale of two facets. J Personal Soc Psychol 92(3):506–525. https://doi.org/10.1037/0022-3514.92.3.506
71. Usher K, Durkin J, Bhullar N (2019) Eco-anxiety: How thinking about climate change-related environmental decline is affecting our mental health. Int J Ment Health Nurs 28(6):1233–1234. https://doi.org/10.1111/inm.12673
72. Verplanken B, Roy D (2013) My Worries Are Rational, Climate Change Is Not: Habitual Ecological Worrying Is an Adaptive Response. PLoS ONE 8(9):e74708. https://doi.org/10.1371/journal.pone.0074708
73. Wang J, Shen M, Chu M (2021) Why is green consumption easier said than done? Exploring the green consumption attitude-intention gap in China with behavioral reasoning theory. Clean Responsible Consum 2:100015. https://doi.org/10.1016/j.clrc.2021.100015
74. Wang J, Yang X, He Z, Wang J, Bao J, Gao J (2022) The Impact of Positive Emotional Appeals on the Green Purchase Behavior. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.716027
75. Wiśniewska A (2025) Attitude towards sustainability as a predictor of consumer behavioral intention. A test of 3x3-item scale in the context of the food market. J Clean Prod 493:144947. https://doi.org/10.1016/j.jclepro.2025.144947

76. Xue L, Li C, Cai E, Wan W, Wei S, Yu Z, Xu H (2023) Evaluation of the impact of moral dissonance-based low-carbon interventions on consumer behavior. J Clean Prod 425:138947. https://doi.org/10.1016/j.jclepro.2023.138947
77. Yang Y, Su Q (2026) Research on the impact mechanism of Green Emotional Involvement on Consumer Engagement Behavior: The chain mediating roles of Perceived Authenticity and Perceived Value. *Frontiers in Psychology*, *16*. https://doi.org/10.3389/fpsyg.2025.1687837
78. Yi S (2012) Shame-Proneness as a Risk Factor of Compulsive Buying. J Consum Policy 35(3):393–410. https://doi.org/10.1007/s10603-012-9194-9

Tables

Tables 1 to 6 are available in the Supplementary Files section.

Figures

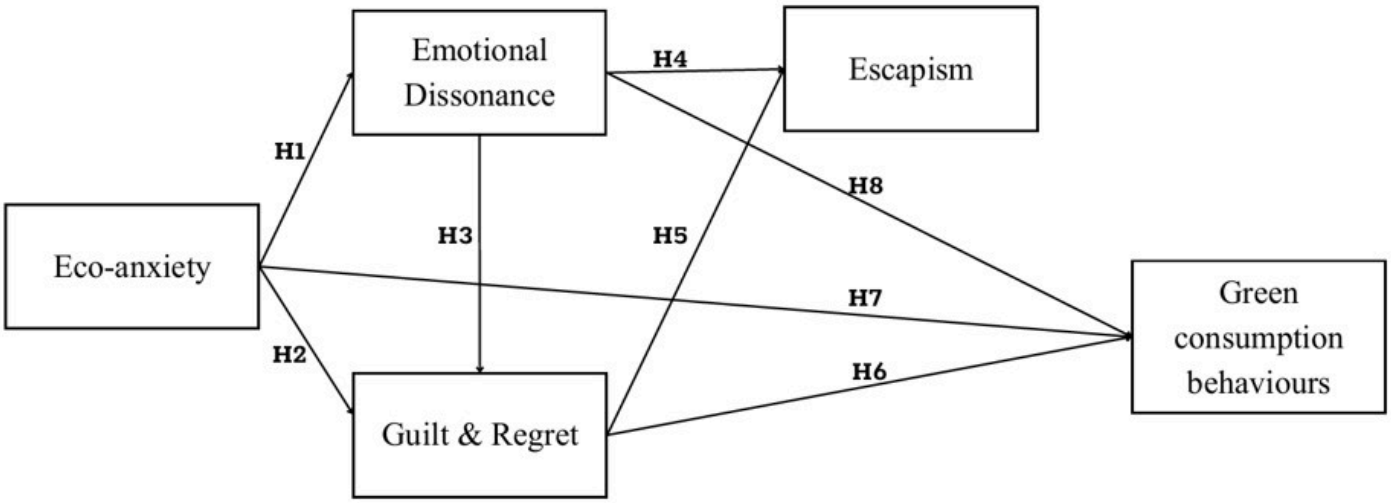


Figure 1

Research model

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