

RESEARCH ARTICLE

Social exclusion and green consumption: The multi-motive theory approach

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Abstract

Household consumption accounting to more than 70% of global GHG emissions is an indication to where sustainable policies should focus their efforts toward a sustainable world. Indeed, one of the tools suggested by governments in their “policies to encourage sustainable consumption” is behavioral approaches. Within this regard, how psychological consequences of social exclusion relate with green consumption is much studied. For example, recent studies adopted costly signaling theory and social belongingness hypothesis to predict green consumption after events of social exclusion/inclusion. Such studies rely heavily on the default view of “humans as social animals” without adequately accounting for the role of motives. Using multi-motive theory, we show how construals like “perceived importance of a relationship” and traits like “fear of negative evaluation” play a role in the relationship between social exclusion and green consumption. In addition, we develop and report a 20 items reliable and valid multidimensional measure for green consumption.

KEYWORDS

fear of negative evaluation, green consumption, multi-motive theory, social exclusion, value of the damaged relationship

1 | INTRODUCTION

The environmental pressure arising from households is significant. Household consumption accounts for over 70% of global greenhouse gas (GHG) emissions and between 50% and 80% of total resource utilization (Hertwich & Peters, 2009; Ivanova et al., 2016). This issue is even more critical in developed nations. For instance, households in the United States alone contribute a quarter of global emissions, equivalent to 5.6 Gt CO₂-eq, while the household carbon footprint of the European Union (EU) amounts to 4.9 Gt CO₂-eq (Ivanova et al., 2016). There has never been a more crucial time to establish a strategy promoting environmentally friendly consumption habits. One such strategy is green consumption, which entails consumers

considering the environmental impact when buying, using, or disposing of goods, with the aim of reducing potential pollution and maximizing long-term benefits (Carlson et al., 1993).

Individuals engage in green consumption behaviors for several reasons. First is the environmental conviction they have, their inner desire or need to protect the earth and its habitats (Peattie, 2010). The second is economic rationality where people engage in green consumption when they think it is the most cost-effective practice on the market (Matsukawa, 2000). Third are factors related to normative or social orientation, how a person is aware of, relates, and adapts to other people, for example whether other respected or reputed individuals within the society influence one's behavior (Van Vugt, 2009). One of the studied relationships in this regard is the role of social

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exclusion, the subjective feelings when one is rejected, isolated, excluded or ignored by other individuals or groups in society, in which situation occur where needs of belonging and social interaction are not met (Williams, 2007).

2 | LITERATURE REVIEW

The existing literature on the relationship between social exclusion and green consumption presents inconclusive and conflicting findings. One set of studies suggests a positive relationship between social exclusion and green consumption (Guo et al., 2020; Lakin et al., 2008; Maner et al., 2007), while another set of studies documents a negative relationship (Naderi, 2013; Wang & Liu, 2023). Each of these studies proposes different mechanisms to explain the divergent results.

The first set of studies suggests that social exclusion strengthens the universal need for belongingness. For example, Guo et al. (2020), drawing on the cost-signaling theory and social belongingness hypothesis, demonstrate that social exclusion motivates individuals to seek and establish new relationships. Social belongingness is considered a fundamental human need, and individuals cannot thrive without it. Therefore, when faced with social exclusion, individuals are more likely to make efforts to reconnect rather than giving up on social connections. They increase their chances of acceptance by engaging in costly activities that signal self-sacrifice to society, such as choosing environmentally friendly products over luxurious ones.

On the other hand, the mechanism proposed in the second set of studies suggests that prosocial and pro-environmental behavior relies on the belief that one is part of a community and an environment where people support and care for each other. However, when people experience social exclusion, their inclination to engage in such behaviors may be reduced or eliminated (Naderi & Mead, 2014; Twenge et al., 2007). Socially excluded individuals tend to exhibit more aggression, less empathy, and weaker self-management capabilities (Warburton et al., 2006), which diminishes their tendency to care for the environment.

Despite the importance of understanding the circumstances that lead to these divergent paths, there has been insufficient exploration thus far. Therefore, we expanded upon the multi-motive theory and proposed two moderating variables: individual characteristic (the trait of fear of negative evaluation) and construal (perceived importance of the relationship from which individuals are excluded). These factors help determine the direction in which social exclusion influences behavior, and we formed hypotheses based on these variables and found empirical evidence to support them.

Furthermore, previous studies that have examined the relationship between social exclusion and green consumption have been limited in their approach to measuring green consumption. These studies primarily relied on scales to assess specific aspects such as green use or green purchase intentions, and then made generalizations about overall green consumption behaviors (Guo et al., 2020; Khan et al., 2020; Lin & Niu, 2018). Moreover, in certain cases, green consumption behaviors were assessed using just a single item (do Paço et al., 2019;

Sun et al., 2019). This limited approach may oversimplify and fail to adequately capture the complexity and nuances of the behavior being measured (Nunnally & Bernstein, 1994; Spector, 1992). To overcome these limitations, prior to testing our hypotheses concerning the moderating effects, we developed a comprehensive 20-item multidimensional measure for green consumption, guided by the theoretical framework of the SB-cube model (Geiger et al., 2018).

3 | THEORETICAL FRAMEWORK

3.1 | Multi-motive theory and social exclusion

According to multi-motive theory (Richman, 2013), three motives help explain the inconsistencies found in the literature regarding the psychological consequences of social exclusion. Following a rejection experience, individuals typically experience three sets of motives that promote competing behaviors. The first motive is sociopetal, which involves a heightened desire for social connections. This motive aligns with the social belongingness hypothesis (Baumeister & Leary, 1995), stating that belongingness is a universal human need, and any deprivation of it can lead to efforts to reconnect. While individuals may feel the urge to seek acceptance, they might not always act upon it. The second motive is revenge-related, characterized by anger and a desire to defend oneself or inflict harm on the source of rejection. Individuals experiencing rejection often feel anger and may act aggressively. The third motive is withdrawal, driven by the motivation to avoid further rejection and the associated emotional pain. As a result, individuals may withdraw from social interactions with both rejectors and others they doubt will accept them.

Understanding the dominance of each motive is crucial because their consequences can vary and even contradict one another. Construals, which are people's interpretations of the rejection event, play a significant role in influencing the activation of specific motives. Previous research (Richman, 2013) has identified six possible construals when faced with rejection, including fairness evaluation, expectations for relationship repair, the pervasiveness of rejection, the value of the damaged relationship, the perceived costs of rejection, and the possibility of finding alternative relationships. These construals help explain which motive becomes dominant in individuals' responses to rejection and can predict different behavioral outcomes. For example, perceiving rejection as unfair is likely to lead to revenge-related behaviors, while high expectations for relationship repair and the value of the relationship can motivate prosocial behaviors aimed at restoring a sense of belonging. Additionally, dispositional traits also influence the dominant motive. For instance, individuals with low entitlement tend to experience a stronger desire for social connection and engage in prosocial behavior when faced with social rejection (MacKenzie & Baumeister, 2019).

Contrary to recent findings by Guo et al. (2020), which suggested that green consumption is primarily driven by sociopetal motives after experiencing social exclusion, we propose an alternative hypothesis. In the context of green consumption, opposing motives such as

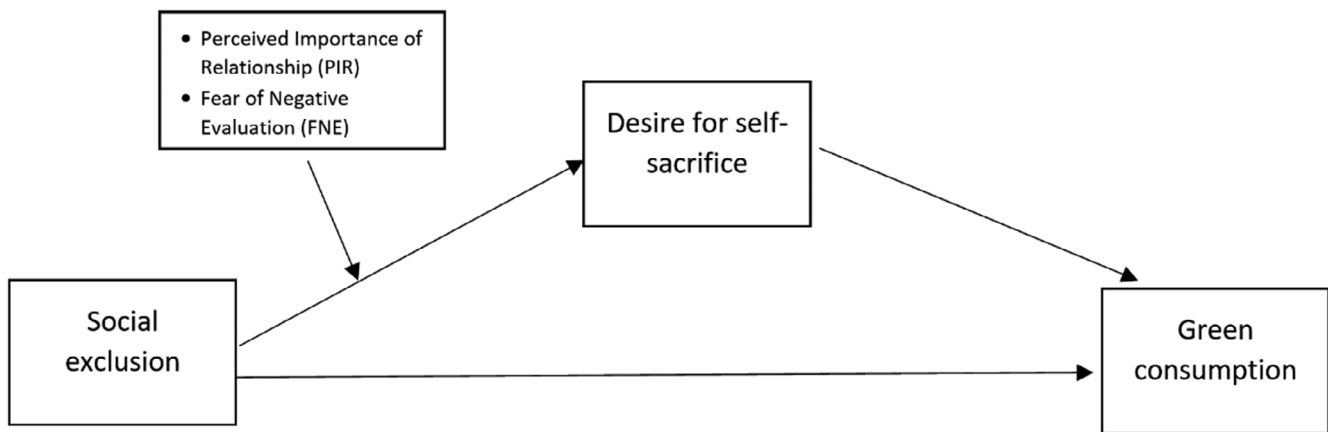


FIGURE 1 Conceptual framework.

withdrawal are more likely to dominate when individuals perceive a high value in the damaged relationship and possess a high trait for fear of negative evaluation. In these specific conditions, social exclusion reduces the desire for self-sacrifice and diminishes the tendency to engage in green consumption behavior (Figure 1). These findings highlight the importance of considering construals and trait factors when exploring the relationship between social exclusion and green consumption, which previous studies have not adequately accounted for.

3.2 | Perceived importance of the relationship

Our reactions to those who exclude us have an impact on the type of response we exhibit (Clark & Finkel, 2005). The motivation to either repair or disregard a relationship following a rejection episode is influenced by how much value the rejectee places on that relationship. Smart Richman and Leary (2009) proposed a model to explain the various responses to rejection. They suggested that if the relationship with the rejecting individual or group is perceived as highly valuable and the cost of the rejection is significant, the rejected individual will be motivated to repair the broken relationship through affiliative behaviors. These efforts often involve engaging in prosocial actions to create goodwill and gain favor in the eyes of the rejector. The importance placed on sustaining relationships with romantic partners, friends, colleagues, or social groups drives individuals to adopt prosocial strategies when responding to rejection. Conversely, when a relationship is not highly valued and rejection occurs, other motivational responses such as aggression or withdrawal may dominate. These responses are more likely in less established relationships or in response to isolated acts of stigmatization or exclusion, as the relationship is considered less valuable, and the individual has less investment in it.

Supporting the findings of Smart Richman and Leary (2009), laboratory-based studies have also revealed emotional consequences associated with rejection when relationships are highly valued and when they are not. For instance, exclusion is emotionally distressing when it comes from members of an outgroup, a social group to which

an individual does not identify (Smith & Williams, 2004; Williams et al., 2002), even if it is a despised outgroup (Gonsalkorale & Williams, 2007). More recent studies have shown a reverse effect, which is intuitive: exclusion by individuals critical to our survival is expected to be more painful than exclusion by those less important to us. A diary study on real-life social exclusion experiences found that participants reported feeling worse and experiencing greater threat after exclusion by close relationships, such as family members and close friends, compared to exclusion by acquaintances and strangers (Nezlek et al., 2012). This finding holds significant meaning given the evolutionary significance of close others (e.g., Sutcliffe et al., 2012).

Following from the previous discussion, costly signaling theory predicts that consumers tend to convey signals about their reputation, status or self-sacrifice or engage in activities that are a manifestation of these, for example green consuming: buying, using, and disposing products/service in a manner considerate to the environment. This is more likely in contexts when such signals are believed by the consumer to increase their socialization needs. One common context is social exclusion events that deprive belongingness, therefore signaling is expected to increase chances of access to reconnection efforts. For two main reasons, we argue that this desire to convey signals becomes loose when consumers perceived value of the damaged relationship is high.

First, rejections by close others (referring to rejections from relationships with high perceived importance) elicit painful psychological consequences like feeling worse, greater need threat, hopelessness, and depression. In the presence of such emotional drainage, wanting to re-establish a newer connection will be weak and altruistic intentions that aim in increasing chances of socialization needs will be minimal, especially those that come at the expense of giving up on something one wants, the desire for the greater good, or to help others (e.g., green consuming). Weakened desire for regaining social connection also implies the likelihood of avoiding establishment of relationships with the surrounding environment and less enrollment in strategic actions that aim in gaining the sense of belonging. For example, green consumption was recently specified as one of these strategic actions, assuming that price of green goods is higher than that of

non-green ones, that allow consumers to convey signals of self-sacrifice thus giving them better access to social transmission and likelihood of social acceptance (Griskevicius et al., 2010; Guo et al., 2020). Therefore, contrary to previous findings, since socially excluded individuals will have less incentive of regaining the sense of belonging and social connections when they perceive the value of the damaged relationship is high, then they are less likely to signal their prosociality and wealth through purchasing of green products or are less likely to have any desire to self-sacrifice.

Second, exclusion from close others might be perceived as temporary thus requiring a much less investment to regain it back. In close relationships, such as families, peace, and belongingness are more likely to be restored eventually due to important default reasons like dependence or survival that serve as primary motivations for reconnecting. Therefore, efforts to regain social connections may not require strategic actions like signaling self-sacrifice. Additionally, close others are already familiar with the rejected individual's deeds and daily actions. Consequently, the rejected individual has less motivation to signal something that is already known by the rejector. Strategic actions aimed at close others during the initial stages of rejection are riskier, as they are more likely to be perceived as insincere. Consequently, exclusion from close others, compared to exclusion from strangers, is more likely to make consumers less inclined toward self-sacrifice and less likely to engage in strategic actions and signaling efforts like green consumption. Based on these arguments, we propose the following hypothesis.

H1. When individuals highly value a damaged relationship (as opposed to not), social exclusion will lead to a weaker (vs. stronger) desire for self-sacrifice, which in turn decreases (vs. increases) their tendency to engage in green consumption.

3.3 | Fear of negative evaluation

In studies on social exclusion, certain personality traits have been identified as predictors of individuals' reactions to rejection. For instance, agreeableness, which reflects a person's inclination to seek closeness and solidarity with others, can moderate their response to rejection. High levels of agreeableness are associated with lower argumentativeness, anger, hurt feelings, and aggression during challenging interpersonal encounters (Gleason et al., 2004; Jensen-Campbell & Graziano, 2001). Additionally, agreeable individuals are more likely to employ constructive strategies, such as forgiveness, when faced with disagreements or conflicts (Jensen-Campbell & Graziano, 2001; McCullough et al., 2009). Consequently, when individuals with high agreeableness are ignored, criticized, rejected, or devalued, they tend to respond in a more composed and prosocial manner (Graziano & Eisenberg, 1997).

Another study examined how individuals with different levels of self-esteem, which pertains to one's belief in their overall social acceptability and approval by others (Leary, 1983), respond to rejection. However, the research findings regarding the moderating effects

of self-esteem on reactions to rejection have yielded conflicting results (Sommer, 2001). On one hand, individuals with high self-esteem, who perceive themselves as more generally acceptable, find interpersonal rejections more surprising and unjustified, leading to stronger feelings of anger and more pronounced reactions to rejection. On the other hand, due to their greater sense of overall acceptability, they may perceive a wider range of social opportunities and alternatives, thereby diminishing the impact of any specific rejection and resulting in less intense reactions. These examples serve as evidence that variations in personality traits determine which motives and behaviors prevail in the aftermath of a rejection experience.

The fear of negative evaluation, a previously unexplored personality trait within the context of social exclusion, is believed to play a significant role in predicting the outcomes of rejection experiences. It encompasses one's anxiety regarding the evaluations of others, distress caused by negative evaluations, and the expectation of negative evaluations from others (Watson & Friend, 1969). This trait suggests that, for certain individuals, negative evaluations are perceived as normal, while for others, they have a demotivating effect (Heimberg, 1995). Furthermore, it implies that individuals with high fear of negative evaluation are more likely to generalize from a single instance of exclusion or rejection. Consequently, they tend to view future reconnections as potential threats rather than opportunities for renewed affiliation.

Although studies have demonstrated that socially excluded individuals may engage in prosocial behavior to seek affirmation, this behavior only occurs when the excluded individuals believe there is a possibility of reconnecting and being included (Guo et al., 2020; Kothgassner et al., 2017; Lakin et al., 2008). However, for consumers with a high fear of negative evaluation, their belief in the chance of reconnecting is weak. As a result, the dominant motive for individuals with high fear of negative evaluation following experiences of social exclusion is more likely to be the motivation to avoid further rejection and the accompanying emotional distress by withdrawing from social contact. This withdrawal may not only involve those who have rejected them but sometimes extends to others whose acceptance they doubt. Consequently, individuals with a high fear of negative evaluation are likely to have less motivation to seek reconnections and to engage in self-sacrificial behaviors such as green consuming.

H2. For individuals with high (vs. low) fear of negative evaluation, social exclusion will lead to a weaker (vs. stronger) desire for self-sacrifice, which in turn decreases (vs. increases) their tendency to engage in green consumption.

4 | MATERIAL

4.1 | Materials and methods

The main purpose of this study is to analyze the moderated mediation effect of perceived importance of the relationship (PIR hereafter) and

fear of negative evaluation (FNE hereafter), on the relationship between social exclusion and consumers' willingness to green consume through desire for self-sacrifice.

4.1.1 | Participants

Eighty-four participants (44.3% male, averagely aged 18–24) were recruited from Prolifics. Participants received a monetary compensation of £6.00 per hour for their participation. To determine the appropriate sample size, we followed the guidelines of Gpower 3.1 for sample size estimation. Specifically, we conducted a priori sample size calculation for a two-group ANOVA statistical test with 1 degree of freedom in the numerator, utilizing the *F*-test test family. We referred to the effect size (*f*) and alpha value obtained from a recent study conducted by Guo et al. (2020), which explored the relationship between social exclusion and green purchase. Additionally, we set the power level at 0.8, a commonly employed value in experimental research within the social sciences (Bausell & Li, 2002).

4.1.2 | Procedures

Participants were assigned randomly to two conditions in a between-subjects design (state of social exclusion: exclusion vs. inclusion). Social inclusion refers to the subjective feeling of being accepted, included, or valued by others or groups in society. It is the opposite of social exclusion. At the start of the experiment, participants were informed that they would be completing two unrelated tasks.

First task: Manipulation of social exclusion

The first task involved a recall and writing activity adapted from Molden et al. (2009). All participants were instructed to recall and describe a specific incident in which they experienced either active rejection or cheerful acceptance. They were asked to provide a brief description of the incident, typically consisting of one or two sentences. Those in the rejected condition were specifically instructed to “think about a time in which you felt intensely rejected in some way... it must be a time that you were clearly rejected—where you were told you were not accepted because you were not wanted or liked.” On the other hand, participants in the included condition were specifically instructed to “think about a time in which you felt intensely accepted or included in some way... it must be a time that you were accepted by others, and increased your sense of belongingness.”

After describing the circumstances of their exclusion or inclusion, participants were asked to rate the importance of the relationship from which they experienced rejection or acceptance on a 5-point importance scale, ranging from 1 (not at all important) to 5 (extremely important). This step aimed to assess the significance of the relationship in the participants' lives. Finally, as a manipulation check, participants were asked to indicate the extent to which they felt excluded or included while recalling and responding to the writing task. They rated their feelings on a seven-point scale, where 1 indicated “Not at all” and

7 indicated “Very much.” This measure ensured that the manipulation effectively induced the intended feelings of exclusion or inclusion.

Second task: Green consumption and mechanism measure

The second task aimed to assess participants' inclination toward green consumption. Two types of measures were utilized: one adopted from previous studies and another developed specifically for this research (refer to Appendix S1A for a detailed description of the procedure we followed in developing our scale). The first measure examined participants' willingness to purchase green products, following the approach of Griskevicius et al. (2010) and Guo et al. (2020). Both groups of participants were presented with two desk lamps placed on a table. The lamps had the same price and were manufactured by the same company (Figure 4). They were labeled as “non-green product A” and “green product B,” respectively.

Lamp A had a more luxurious appearance, with a silk lampshade that provided optimal light filtration. It also featured automatic brightness adjustment through induction, with a power rating of 150 Watts. Lamp B, on the other hand, had more environmentally friendly attributes. Its lampshade was crafted from recycled organic fiber cotton cloth, and it consumed only 15% less energy compared to the non-green alternative. The wattage was lower but sufficient for regular usage. After reading the descriptions, participants were asked to complete a survey indicating their preference. The scale ranged from 1 (indicating a preference for the non-green product) to 7 (indicating a preference for the green product). The higher the number, the stronger the preference for the green product ($M = 5.63$, $SD = 1.69$).

While this measure provided insights into participants' purchasing choices, it had some limitations. First, it captured preferences in a dichotomous manner rather than on a continuous scale, which might have restricted the ability to capture sufficient variation among the samples. Second, it solely focused on the purchasing aspect and did not encompass the broader aspects of green consumption. Green consumption encompasses green purchase, green use, and green disposal (Glavič & Lukman, 2007). Consequently, participants were asked to respond to a multidimensional measure comprising 20 items (see Appendix S1B) that we developed to assess green consumption (Table 1). This measure included 7 items related to green purchase (e.g., “Environmental protection is important to me when making purchases,” Cronbach's $\alpha = .856$), 4 items related to green disposal (e.g., “Environmental protection is important to me when disposing of products,” Cronbach's $\alpha = .827$), and 9 items related to green use (e.g., “Environmental protection is important to me when using products,” Cronbach's $\alpha = .797$).

Furthermore, participants answered four itemed questions measuring their inclination for self-sacrifice (Table 2). These four items were derived from Kim (2009) study and included statements such as “I feel good to be able to contribute a little to the public, even if no one pays me for it,” “It is more important to make society better than personal achievement,” “I can make appropriate sacrifices for society,” and “I hold the belief that fulfilling obligations takes precedence over self-interest.” Participants rated their agreement with these statements on a 7-point Likert scale ($M = 4.78$, $SD = 1.13$, Cronbach's $\alpha = .867$).

TABLE 1 Green consumption multidimensional measure.

Items	Loading	Dimension	Reliability (Cronbach's alpha)
I would be willing to pay more for wind-powered energy.	0.783	Green purchase	0.856
I would be willing to pay more for my electric bill if I knew the cost paid for environmentally safe electricity.	0.766		
I would be willing to pay more now in exchange for possibly lower electric rates in the future.	0.758		
I would be willing to support a fuel adjustment clause in my electric bill to subsidize the cost of developing wind-powered energy.	0.749		
I would be willing to use more expensive forms of energy to reduce pollution.	0.686		
Environmental protection is important to me when making purchases.	0.448		
I have a favorable attitude toward purchasing an energy-saving product.			
It is important for me to bring empty bottles to a recycling bin.	0.833	Green disposal	0.827
It is important for me to sort home waste in their respective categories before disposing them into the dust bin.	0.813		
It is important for me to collect and recycle used paper.	0.732		
Environmental protection is important to me when disposing products.	0.601		
If I can choose between energy-saving and conventional products, I prefer energy saving one.	0.691	Green use	0.797
I want to eat organic food.	0.672		
I want to avoid food products with excessive packaging.	0.656		
I would be willing to support a local project to generate energy with wind-powered devices.	0.543		
I want to avoid food products that were imported by airplane.	0.468		
Environmental protection is important to me when using products.	0.443		
I want to eat less meat (maximum once or twice per week).	0.432		
I want to eat regional food.	0.407		
I want to eat only seasonal fruits and vegetables.			

TABLE 2 Measure for desire for self-sacrifice, Kim (2009).

Item 1	I feel good to be able to contribute a little to the public, even if no one pays me for it.
Item 2	It is more important to make society better than personal achievement.
Item 3	I can make appropriate sacrifices for society better.
Item 4	I hold the belief that fulfilling obligations takes precedence over self-interest.

Note: Please indicate the extent to which you agree with the following statements.

To assess fear of negative evaluation (FNE), we employed the 12-item version of Leary's (1983) FNE scale (Table 3). The scale consisted of items such as "I worry about what other people will think of me even when I know it doesn't make any difference." Participants rated the extent to which each statement characterized them on a 5-point Likert scale, ranging from 1 (not at all characteristic of me) to 5 (extremely characteristic of me; $M = 2.73$, $SD = 0.75$, Cronbach's $\alpha = .862$). Finally, participants were asked to report their affect using the PANAS scale (Watson et al., 1988), which comprised 20 items. The scale ranged from 1 (indicating very slight or no affect) to 5 (indicating extremely strong affect). Additionally, basic demographic questions were included in the survey.

5 | RESULTS

5.1 | Manipulation check

The results indicate that participants in the social exclusion group reported feeling more excluded compared to those in the social inclusion group [$M_{\text{social exclusion}} = 5.71$, $SD_{\text{social exclusion}} = 1.4$ vs. $M_{\text{social inclusion}} = 2.2$, $SD_{\text{social inclusion}} = 1.74$, $F(1,84) = 264.7$, $p < .001$, $\eta^2 = 0.556$]. These findings suggest that the social exclusion group experienced a greater sense of exclusion, indicating the successful manipulation of social exclusion.

5.2 | Moderated mediation PIR

To test the moderated mediation effect of PIR, this study followed the analysis procedure proposed by Zhao et al. (2010) and utilized the model by Preacher et al. (2007) and Hayes (2017). The analysis was conducted using bootstrapping with 5000 samples (PROCESS model 7; Hayes (2017)).

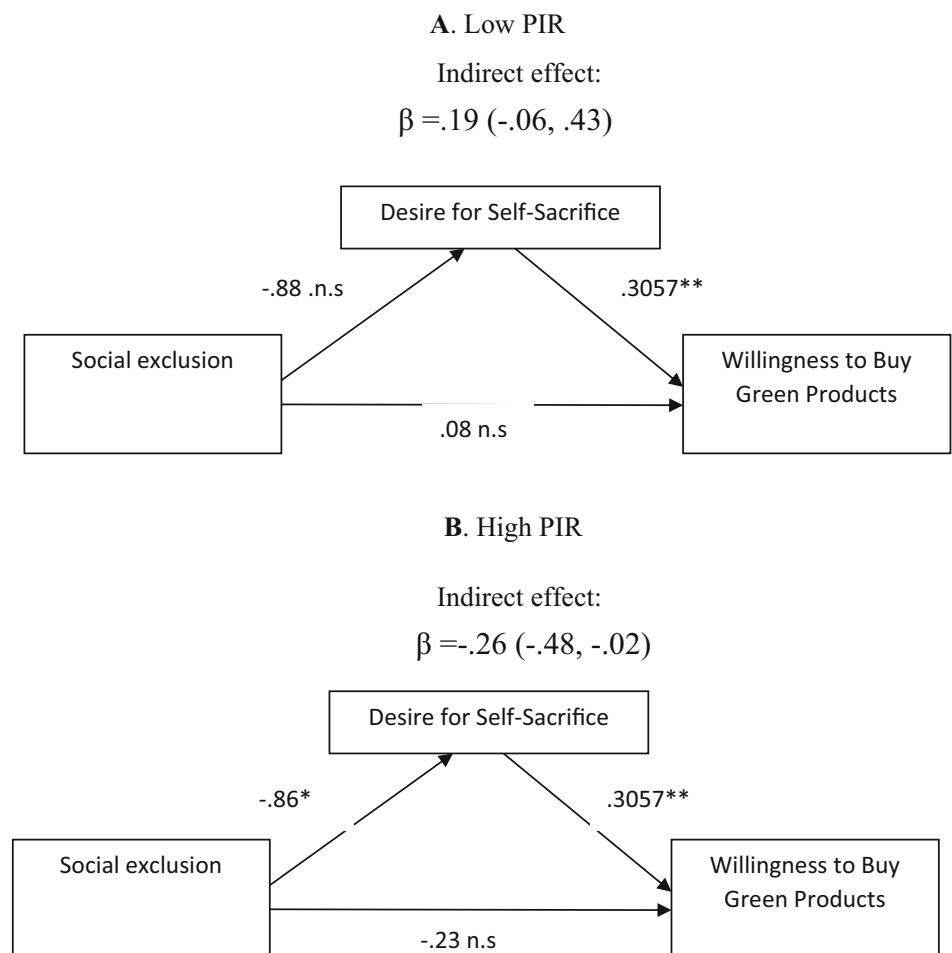
First, we regressed desire for self-sacrifice on social exclusion, PIR and their interaction. The results confirmed a significant interaction effect ($\beta = -0.84$, $t = -2.67$, $p = .009$, $r^2 = 0.28$) (See Figure 5

TABLE 3 Measure for fear of negative evaluation, Leary's (1983).

Item 1	I worry about what other people will think of me even when i know it does not make any difference.
Item 2	I am unconcerned even if i know people are forming an unfavorable impression of me.
Item 3	I am frequently afraid of other people noticing my shortcomings.
Item 4	I rarely worry about what kind of impression i am making on someone.
Item 5	I am afraid that others will not approve of me.
Item 6	I am afraid that people will find fault with me.
Item 7	Other people's opinions of me do not bother me.
Item 8	When i am talking to someone, i worry about what they may be thinking about me.
Item 9	I am usually worried about what kind of impression I make.
Item 10	If i know someone is judging me, it has little effect on me.
Item 11	Sometimes I think I am too concerned with what other people think of me.
Item 12	I often worry that I will say or do the wrong things.

Note: Read each of the following statements carefully and indicate how characteristic it is of you according to the following scale: 1 = Not at all characteristic of me, 2 = Slightly characteristic of me, 3 = Moderately characteristic of me, 4 = Very characteristic of me, 5 = Extremely characteristic of me.

FIGURE 2 Moderated mediation analysis: desire to self-sacrifice as a mediator *significant at the 0.05 level; **significant at the 0.001 level; n.s., not significant at the .05 level.



in Appendix B for additional analysis and visualization of the interaction effect). Second, we regressed willingness to buy green products on social exclusion, PIR, desire for self-sacrifice and social exclusion \times PIR. The results identified a significant main effect of desire for self-sacrifice ($\beta = 0.66$, $t = 3.98$, $p < .001$, $r^2 = 0.31$). The overall model demonstrated a significant moderated mediation effect (moderated mediation effect = -0.559 , 95% bias-corrected CI ranged from -1.07 to -0.08), providing support for the moderated mediation effect. Specifically, when PIR is high, the indirect effect was significant (indirect effect = -0.26 , 95% bias-corrected CI ranged from -0.48 to -0.02). However, when PIR is low, the indirect effect was not significant (indirect effect = 0.19 , 95% bias-corrected CI ranged from -0.06 to 0.43). Please refer to Figure 2 for a visual representation.

We further examined the moderated mediation effect on the multidimensional green consumption measure using similar techniques (refer to Table 4). The results consistently supported the findings across all dimensions of the green consumption measure. Therefore, H1 received support.

5.3 | Moderated mediation FNE

In order to test the moderated mediation effect of FNE, the study followed the procedure proposed by Zhao et al. (2010), and the

model by Preacher et al. (2007), and Hayes (2017), and conducted the mediating analysis by bootstrapping using 5000 samples

TABLE 4 Moderated mediation effect on the multidimensional green consumption measure.

Overall model effect when the green consumption dimension is				
	Effect index	CI _{low}	CI _{high}	
Green purchase	-0.26	-0.46	-0.03	
Green use	-0.25	-0.44	-0.04	
Green disposal	-0.26	-0.48	-0.04	
Moderated mediation effect				
	PIR	Effect	CI _{low}	CI _{high}
Green purchase	Low	0.19	-0.04	0.44
	High	-0.26	-0.52	-0.01
Green use	Low	0.18	-0.05	0.42
	High	-0.26	-0.49	-0.01
Green disposal	Low	0.19	-0.06	0.45
	High	-0.27	-0.54	-0.01

Note: Values are significant at the 95% CI if the CI lower and higher limits do not cross zero.

(PROCESS model 7; Hayes 2017). First, we regressed desire for self-sacrifice on social exclusion, FNE and their interaction. The results confirmed a significant interaction effect ($\beta = 0.7065$, $t = 2.133$, $p = 0.03$, $r^2 = 0.32$) (See Figure 6 in Appendix C for additional analysis and visualization of the interaction effect). Second, we regressed willingness to buy green products on social exclusion, PIR, desire for self-sacrifice and social exclusion \times PIR. The results revealed a significant main effect of desire for self-sacrifice ($\beta = 0.66$, $t = 3.98$, $p < .001$, $r^2 = 0.55$). The overall model showed a significant moderated mediation effect (moderated mediation effect = 0.471, 95% bias-corrected CI ranged from 0.01 to 1.06), supporting the presence of moderated mediation. Specifically, when FNE is low, the indirect effect was significant (indirect effect = -0.25, 95% bias-corrected CI ranged from -0.53 to -0.01). However, when FNE is high, the indirect effect was not significant (indirect effect = 0.07, 95% bias-corrected CI ranged from -0.11 to 0.30). Refer to Figure 3 for a visual representation of these findings.

We also examined the moderated mediation effect on the multidimensional green consumption measure using similar techniques (refer to Table 5). The results consistently supported the presence of the moderated mediation effect across all dimensions of the green consumption measure. Therefore, H2 was supported.

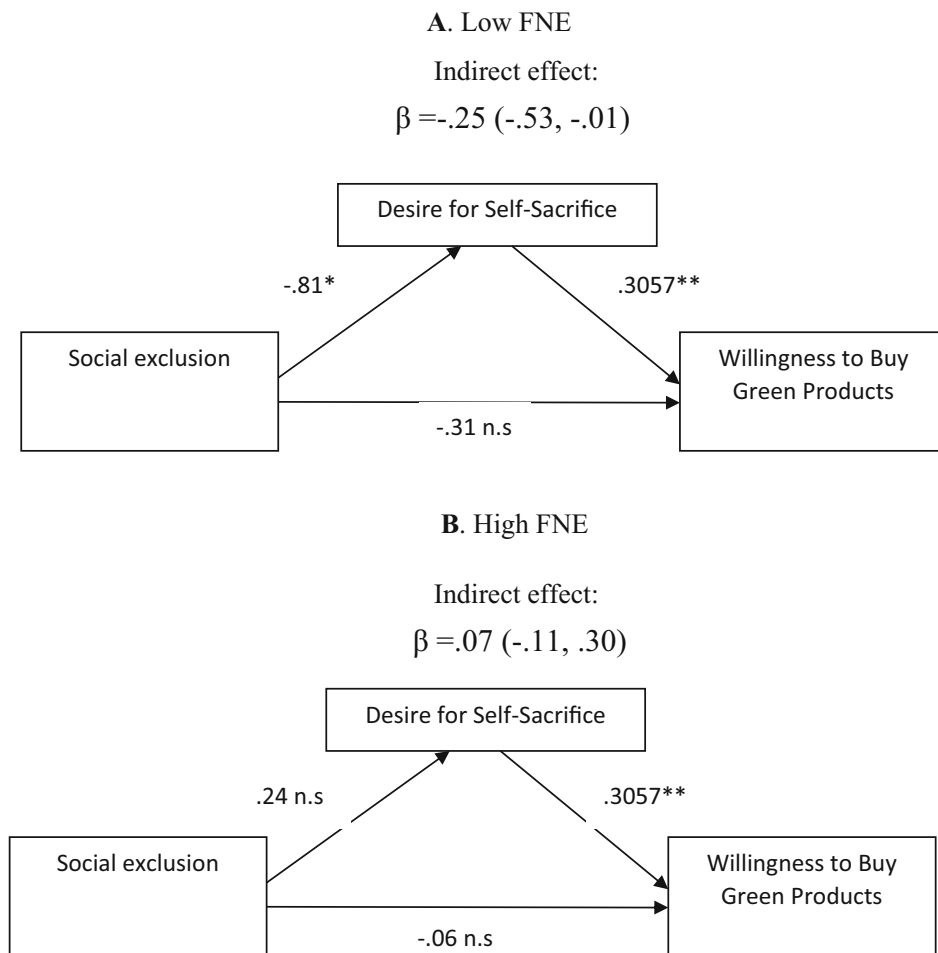


FIGURE 3 Moderated mediation analysis: desire to self-sacrifice as a mediator *significant at the 0.05 level; **significant at the 0.01 level; n.s., not significant at the .05 level.

Task 2 (Study 2)

The purpose of this task is to investigate consumer preferences of a product across many different situations.

Below you find two products (a non-green and green product) with different descriptions. After reading the product descriptions, please indicate your product of preference.

Dowmo's new lamp in 2019

Dowmo company is a leading enterprise in German lighting industry, which has won various awards in the industry for many years.

	Non-green product (Lamp A)	Green product (Lamp B)
Introduction	Lamp A is made with silk lampshade filtering the best light, and the brightness can be adjusted automatically by induction for 150 Watts.	Lamp B is made with recycled organic fiber cotton cloth, and its energy consumption is only 15% of non-green lamps. The wattage is low but enough for normal use.
Usage scenarios	Work and study	Work and study
Degree of luxury	***	*
Degree of environment friendly	*	***
Price	51 USD	51 USD

	1= Non-green product (Lamp A)	2	3	4	5	6	7=Green product (Lamp B)
Please indicate the product you prefer to buy on the scale of 1 to 7 (7 indicates that you are highly willing to buy Lamp B (the green product); 1 indicates that you are highly willing to buy Lamp A (the non-green product)).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

FIGURE 4 Unidimensional and ordinal measure for green consumption.

TABLE 5 Moderated mediation effect on the multidimensional green consumption measure.

Overall model effect when the green consumption dimension is				
	Effect index	CI _{low}	CI _{high}	
Green purchase	0.21	0.001	0.50	
Green use	0.21	0.003	0.45	
Green disposal	0.22	0.000	0.49	
Moderated mediation effect				
	FNE	Effect	CI _{low}	CI _{high}
Green purchase	Low	-0.25	-0.58	-0.01
	High	0.07	-0.11	0.31
Green use	Low	-0.24	-0.52	-0.01
	High	0.07	-0.11	0.29
Green disposal	Low	-0.25	-0.55	-0.01
	High	0.07	-0.11	0.31

Note: Values are significant at the 95% CI if the CI lower and higher limits do not cross zero.

6 | GENERAL DISCUSSION

This study investigated the circumstances under which consumers engage in green consumption in response to social exclusion. Consistent with previous findings (Wang & Liu, 2023), we document that social exclusion can demotivate green consumption by attenuating individuals' desire for self-sacrifice. However, our results are inconsistent with the contrary effect reported by Guo et al. (2020). Moreover,

prior research has indicated that certain situational factors and consumers' interpretations of the exclusion-related information can moderate this indirect effect. For instance, situational factors such as the presence of an audience during the purchase process (public vs. private) and consumers' construals, such as attributing the cause of the exclusion as stable or unstable, have been shown to play a role. In this paper, we extended the examination of boundary conditions. First, we explored the moderating role of a personality trait, an aspect that had not been previously examined. Second, we investigated the influence of another construal, namely the perceived importance of the relationship in which the exclusion occurs. Our findings demonstrate that the aforementioned indirect effect is observed among individuals who perceive the importance of the relationship they were rejected from as high or those who report a low FNE personality trait.

7 | THEORETICAL IMPLICATIONS

Our study contributes in three key theoretical areas. Initially, researchers primarily focused on examining the factors that influence individuals' intention to engage in green purchasing, specifically considering environmental consciousness (Schlegelmilch et al., 1996) and economic rationality (Naderi & Van Steenburg, 2018). Subsequently, a limited number of studies explored this relationship through the lens of social exclusion (Guo et al., 2020). In contrast, our study goes beyond previous research by investigating the relationship across all dimensions of green consumption, including green disposal and green product usage, instead of solely focusing on green purchase

intentions. This comprehensive approach deepens our understanding of the relevant literature and makes a valuable addition to the existing body of knowledge. Additionally, by utilizing the SCB-cube (Geiger et al., 2018) as a guiding heuristic when constructing a scale for green consumption, we also enhance the validity of the cube model.

Furthermore, our findings provide valuable insights into the circumstances that drive green consumption based on the pursuit of social approval. Prior research consistently demonstrated that perceptions of social value (Caniëls et al., 2021), feelings of social approval (Papista & Krystallis, 2013), and the desire for status (Griskevicius et al., 2010) motivate individuals intending to engage in green buying. Although this phenomenon had not been specifically examined before, it was logical to expect that the effect would be amplified among individuals with a high FNE due to their reported heightened need for social approval (Watson & Friend, 1969). However, our results challenge this assumption and shed exploratory light on this area.

First, our findings reveal a negative correlation between a high FNE tendency and measures of green consumption ($r = -0.245^*$) and self-sacrifice ($r = -0.246^*$). This suggests that green products may not always be perceived as triggering a sense of social approval, or that certain individuals may not associate such products with those feelings. Second, our study indicates that social exclusion does not stimulate a desire for self-sacrifice or a propensity for green consumption among individuals with high FNE. This finding can be attributed to the pervasive consequences of FNE. Individuals with high FNE experience heightened apprehension about the possibility of negative evaluation, leading them to behave in ways aimed at avoiding unfavorable judgments. They also exhibit higher levels of social anxiety compared to those with low FNE (Leary, 1983). Moreover, individuals with high FNE tend to actively avoid potentially threatening social comparison information and express greater distress when receiving negative evaluations (Smith & Sarason, 1975). Hence, the presence of social anxiety as a disposition, independent of factors such as social exclusion, can wield significant influence in fostering antisocial or anti-environmental tendencies. This finding aligns with recent research that has investigated the adverse association between personality traits, particularly neuroticism, and green consumption (Duong, 2022). In doing so, our findings further corroborate and support the growing body of evidence highlighting the negative relationship between certain personality traits and engagement in environmentally friendly behaviors.

8 | PRACTICAL IMPLICATIONS

According to Sonigo et al. (2012), the EU's "policies to encourage sustainable consumption" document suggests two key tools and approaches: behavioral tools and communication/information tools. One specific tool involves integrating nudging techniques into the informational or physical choice architecture of consumers, with a focus on promoting social inclusion. Our study sheds light on the optimal situations and target audience for implementing social inclusion nudges to enhance sustainable consumption. Considering that

housing, transport, and food and drink are the most environmentally significant consumption areas (EEA, 2013), and also areas where nudging researchers and practitioners see significant potential (Stordalen & Kallbekken, 2014), our findings hold promise for informing policy decisions.

9 | LIMITATIONS AND FURTHER RESEARCH

Despite our rigorous methodology and efforts to control potential sources of bias and threats to internal validity, it is important to acknowledge the limitations of our study. First, the use of scenario experiments may limit the external validity of our findings. Future research should consider employing alternative research methods, such as field studies or longitudinal designs, to enhance the generalizability of the results.

Second, our study focused primarily on the relationship between social exclusion and green consumption, neglecting the potential influence of other construal and trait variables outlined in the multi-motive theory. Variables such as "expectations," "perceived cost," and "agreeableness" may also play a significant role in shaping the relationship between social exclusion and green consumption. Exploring these variables in future research could provide a more comprehensive understanding of the underlying mechanisms.

Furthermore, it is worth noting the distinction between different experiences of social exclusion highlighted in the literature. For example, being rejected versus being ignored are both considered forms of social exclusion but are assumed to differ in dimensions and consequences. Rejection poses a threat to relational needs, such as self-esteem and a sense of belonging, while being ignored threatens efficacy needs, including personal power, control, and a sense of meaningful existence. Our study did not differentiate between these types of social exclusion, and future research could investigate how different forms of social exclusion may impact green consumption differently.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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