Measuring antecedents of green consumption in a circular economy: An empirical study of household consumers for moral identity and pro-environmental self-accountability

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A B S T R A C T

This paper's goal is to investigate how consumers' moral identities and pro-environmental self-accountability combine to influence their green consumption behavior. In this study, the researcher looked at the latest literature in the area and hypotheses were framed. Previous research on structural relationships is lacking in the literature on antecedents of green consumption. Due to gaps in the literature, this research combines the theories of social-cognitive perspective moral identity theory, and self-accountability theory on the relationship between moral identity and green consumption as well as examines the impact of pro-environmental self-accountability on green consumption. The hypotheses were tested after data was collected through questionnaires. A measurement model and structural models were also assessed. The results demonstrate that consumers' moral identities affect their green consumption. In particular, consumer green consumption is impacted when they are encouraged to have a high level of self-accountability. This study adds to the body of knowledge on how to increase consumer green consumption, which has managerial and governmental policy implications. However, the dependent measures are likewise constrained as the authors only included household consumers as participants. Future studies can use different sample types and dependent metrics to test the conclusion's generalizability.

1. Introduction

Green products are those that will not hurt the environment or do not potentially include materials that could. Green products specifically are those that may be recycled or use less energy while not polluting the environment or destroying natural resources (Mostafa, 2007). Green products typically include biodegradable, nontoxic chemicals, and recyclable packaging, require less energy, and have a 20–25 percent higher price tag when compared to conventional goods (Lin and Chang, 2012). Green consumption is a type of environmentally friendly behavior in the consumption sector that involves actions like purchasing and using green items, sorting and recycling trash, and making better use of limited resources.

It is difficult to increase consumer green consumption because it requires consumers to weigh the costs and rewards of their own actions and those of others. Purchasing green items, for example, is altruistic because they are more expensive and of poorer quality than conventional ones but are better for the environment (Griskevicius et al., 2010). Recycling is one example of a green consumption activity that presents a unique self-control trade-off. While it may be more convenient for people to just throw away things rather than arrange, store, and place them for recycling in the short term, recycling is ultimately beneficial for everyone's well-being. Therefore, adopting uncomfortable green spending habits costs individuals money in the short term but benefits society (White et al., 2011).

2. Literature review and hypothesis development

2.1. Moral identity

According to earlier research, moral identity significantly predicts altruistic behavior like charity gifts (Aquino et al., 2009; Aquino and Reed, 2002).

Expanding green consumption is the process via which moral identity affects altruistic conduct (Reed and Aquino, 2003). Consuming sustainably is also altruistic. It implies that when customers decide what to buy, they take into account the interests of others. Does this suggest that morality will encourage environmentally friendly consumption? Does moral identification lead people to evaluate the advantages of others? A high moral identity takes into account the needs of others and the environment, increasing the chance of green consumption.

The regulating mechanism and moral identity affect morally relevant activities. People balance many aspects of their identity, but only a portion of that identity can be active in awareness at any given time as a working self-concept (Markus and Wurf, 1987). Any aspect of identity, including moral identity, can have an impact depending on how easily it can be accessed in the situation (Adjei et al., 2022). The social-cognitive principle states that the ease of access to a knowledge structure, such as a moral self-schema, dictates how much of an impact it may have on how information is processed and how people behave (Aquino et al., 2009). Accessibility to moral identification will make moral identity a potent moral behavior regulator. On the other hand, its activation potential is reduced when moral identity is not available.

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Previous studies have shown that situational activated moral identity and chronic individual differences in moral identity centrality both have an impact on consumer behavior.

Aquino and Reed (2002) found that household consumers with high moral identity centrality gave more food to those in need and that the amount given was positively connected with moral identity centrality. Additionally, they discovered that self-reported volunteerism was positively correlated with moral identity centrality. According to Reed and Aquino's (2003) research, people with high moral identity centrality showed stronger self-reported moral obligations to help other groups, were more willing to exchange personal resources (love and status) with out-group members, showed more favorable attitudes toward relief efforts to help out-groups, even when those out-groups were only tangentially related to inter-group conflict, and contributed more money.

2.2. Pro-environmental self-accountability

According to studies on this subject, self-standards comprise personal self-standards and normative self-standards (Stone and Cooper, 2001). Personal self-standard refers to one's conception of oneself, specific self-knowledge, and, in some ways, embedded self-attributes.

Normative self-standards are derived from widely accepted cultural norms and laws. People use their own criteria to judge how competent and moral their behavior is. Self-standards alone do not direct behavior. Conflicts in the mind are powerful motivators. People desire to change their attitudes and behavior to conform to their self-standards when their behaviors do not match those standards. Particularly, people are more likely to insist on certain self-standards and judge or modify their behavior in accordance with these standards when these standards are salient (Thibodeau and Aronson, 1992). The capacity to uphold one's own standards constitutes self-accountability (Peloza et al., 2013).

Previous research has shown that a key element of green consumption is pro-environmental self-accountability. For instance, Schultz (1999) discovered that consumers' recycling frequency and amount improved when their personal norms or social norms, which implied strong self-accountability, were engaged.

According to research by Peloza et al. (2013), raising customers' pro-environmental self-accountability may enhance their demand for green products marketed with additional benefits.

When consumers' self-accountability is strong, they are more likely to consider the benefits of others, feel strongly connected to their actions and the environment, and are more inclined to uphold their pro-environmental self-standards.

2.3. Green consumption

Green consumerism is charitable (Griskevicius et al., 2010). Consumers consider not just the benefits to themselves, but also the benefits to other people, other species, and even the entire planet, as well as the benefits to the present and the future, while making consumption decisions. According to the constructal level hypothesis, there is a wider psychological separation between one's own consumer behavior and its impacts on other people, other species, the earth as a whole, and the future (Wu et al., 2022). When consumers consider more psychologically distant events and items, they are more inclined to engage in altruistic green consumption moral identities are accessible or they are at high construal levels. Customers will have better pro-environmental self-accountability at high

construal levels regardless of whether moral identities are accessible.

Consumers with more accessible moral identities, as opposed to those with less accessible moral identities (Beatson et al., 2020; Khan et al., 2020), show increased green consumption when construal levels are low. Stronger consumer propensity toward green consumption is brought on by higher levels of pro-environmental self-accountability or an accessible moral self-schema. In other words, the link between moral identity and green consumption cannot be ignored, pro-environmental self-accountability is also hypothesized to influence green consumption. Hypotheses thus framed were:

H01: Moral Identity has a positive significant influence on green consumption.
H02: Pro-environmental self-accountability has a positive influence on green consumption

3. Material and methods

The study's main goal was to investigate the role of pro-environmental self-accountability and moral identity and the likelihood of purchasing green products termed green consumption. The study explores moral identity while measuring self-accountability on an individual basis at the conceptual level. This study used two independent variables (moral identity and self-accountability) to examine their influence on Green consumption.

The likelihood of purchasing a green product in comparison to a conventional product was the dependent variable. The experiment had 214 household consumers.

The questionnaire has four sections. Self-accountability was measured in the first step (Vallacher and Wegner, 1989). The scale has two listings for each of the 25 target behaviors. That, out of these two descriptions, most accurately captured their behavior. Developing moral identity was the focus of the study's second section. For moral identity priming, we consulted Reed et al. (2007) and Li et al. (2013)'s research designs.

The third section of the questionnaire looks into consumers' preferences for green versus conventional items. We highlighted the negative effects of global warming and suggested that minimizing carbon emissions could help with the problem. Then we gave the participants a choice between two types of products, one prepared using traditional techniques and cost 15 Riyals per box and the other using low carbon technologies and costing 20 riyals per box. In comparison to the traditional product, we asked participants how likely they would be to purchase the Product created using low-carbon technology if they went to the store to buy a box. Similar other comparative questions were asked and measured on 5 pt scale. We used a five-point scale to quantify the choice likelihood; the higher the number, the more likely it was that the Product would be produced using low-carbon technology.

The participants' pro-environmental self-accountability was evaluated using five question items on a five-point scale in the questionnaire's fourth section. The scales used by Peloza et al. (2013) and Nordlund and Garvill (2002) were modified for the pro-environmental self-accountability measure. Pro-environmental self-accountability scale reliability is 0.882. In the final section, we asked individuals their ages and gender.

3.1. Common method bias assessment

300 household consumers in KSA made up the research sample. During the months of February through April 2022, an invitation was sent along with the research questionnaire. Household consumers provided 230 responses, bringing the response rate to 71.33% of the population. There were 214 complete surveys, with 16 incomplete responses. Bias in response and absence of reaction was guaranteed. Exploratory factor analysis (EFA) was used to test for response bias, and non-response bias was ruled out by comparing early and late responders because they are similar to non-respondents (Armstrong and Overton, 1977).

There was an effort made to reduce common method bias during the data analysis (CMB) (Table 1). Many studies that use self-administered questionnaires or data from a single source for data collection will contain this mistake (Duong, 2021). As a result, a cover letter was created, the guarantee of anonymity and confidentiality of responses was upheld, ambiguous statements were avoided, different color schemes were also used, proper construct labeling was also carried out in this way, and a straightforward research instrument was developed to reduce CMB (Podsakoff et al., 2003).

4. Data analysis

4.1. Evaluation of the measurement model

When the analysis was carried out using the SEM, a measurement model was first evaluated; several tests were carried out during the evaluation of the measurement model to ensure dimensionality, reliability, and validity first (Hair et al., 2019).

4.2. Use of confirmatory factor analysis to evaluate unidimensionality

Moral identity was not determined initially to be unidimensional when (CFA) was conducted for all research variables; hence one item of this construct was eliminated to provide a more accurate scale. The outcomes are listed as follows: All of the research constructs' path values were discovered to be greater than 0.50. Cronbach's alpha, which exceeded the minimum criterion of 0.70 for all research constructs, maintained internal consistency (Fig. 1 and Table 2).

4.3. Assessment of structural equation modeling (SEM)

Based on the estimates offered by LISREL 8.80, the outcomes of the structural equation model assessment and testing of the hypotheses were interpreted (Fig. 2 and Table 3).

5. Findings

As the estimated value is substantial, Hypothesis 1, which stated that Moral Identity has a positive significant influence on green consumption was accepted (*0.20). Similarly, hypothesis 2, which holds that Pro-environmental self-accountability has

a positive influence on green consumption, was also supported because the estimated value is substantial (0.37) (Fig. 2).

6. Theoretical contributions

According to research on moral identity, it is a powerful predictor of altruistic behavior, such as charity giving (Aquino et al., 2009), but past studies hardly ever examined the mediators of this relationship or how to connect moral identity to green consumption. The focus, however, has been on analyzing consumer green consumption influences in the domain of green consumption.

Table 1: Group statistics for estimation of non-response bias (Component transformation matrix)

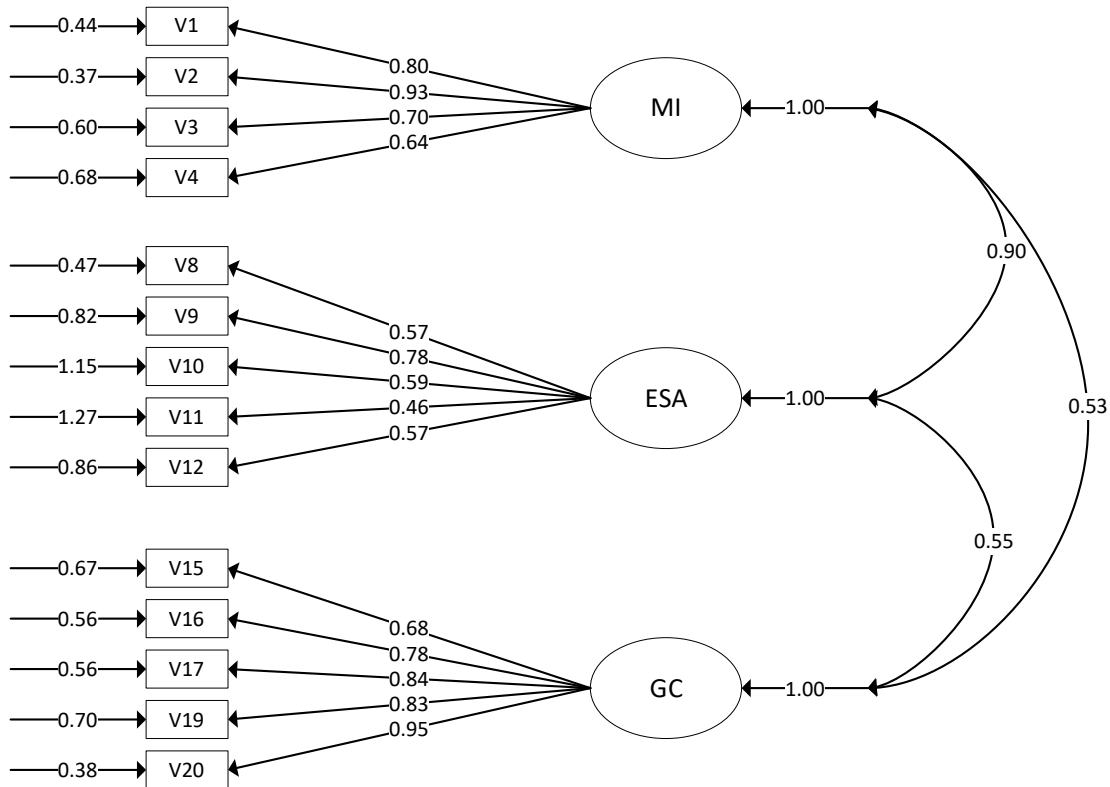|	Timing	N	Mean	Std. deviation	Std. error mean
MI	Ely	190	2.5255	1.32550	.22473
	Lte	24	2.0245	1.32469	.22510
ESA	Ely	190	1.8236	1.32560	.22902
	Lte	24	1.2281	1.12451	.22197
GC	Ely	190	1.6264	1.39882	.22823
	Lte	24	1.7297	1.48758	.22718

Fig. 1: Showing CFA for all study scales

Table 2: Showing fit indices and t values

Scale	Loading value (Range)	NFI	Range of t-values
MI	0.50-0.87	0.89	4.56–15.70
ESA	0.56–0.85	0.91	4.75-16.83
GC	0.72–0.95	0.91	10.64–12.26

Table 3: Showing fit indices for the structural model

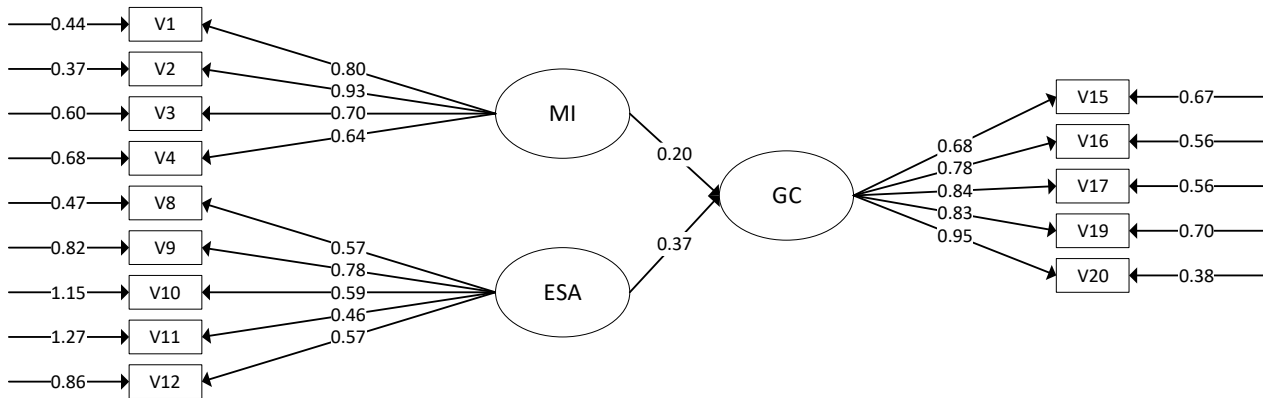| Constructs	Fit indices						
	GFI	AGFI	NFI	NNFI	CFI	SRMR	RMSEA
Model	0.85	0.84	0.87	0.86	0.88	0.06	0.11

Fig. 2: Showing structural model for all study variables

Verplanken and Holland (2002) discovered that consumers' attention and weight to information about related values would increase when pro-environmental values were primed, leading to the selection of environmentally friendly products. However, this influence of values priming on product choice only occurred for those who regarded pro-environmental values as the core of their self-concept. Consumers, according to Cornelissen et al. (2008) are more likely to engage in green consumption practices when they are given cues that doing everyday pro-environmental behaviors is environmentally friendly and that doing so increases their pro-environmental self-perceptions. However, research on mediation mechanisms is lacking in earlier green consumption literature. We use the social-cognitive perspective moral identity theory, particularly the in-group circle expansion of moral identity, to fill in gaps in the preceding literature. First, moral identity is a significant predictor of the consumption of green products. As a result, businesses can consider segmenting the marketers who choose their target customers based on the consumers' stable individual distinctions in moral identity and the significance of those identities. Additionally, businesses can create packaging or marketing that could shape consumers' moral identities.

Give consumers some adjectives, for instance, that could help them identify their moral character. Second, raising the construal level of customers whose moral identity is inaccessible can increase consumer preference for green products because the construal level can modulate the relationship between moral identity and consumer green consumption. When promoting green products, businesses can utilize designs that could raise consumers' construal levels. Think about the future or pose some why questions to consumers, for instance. Further research on adding measures of construal levels can be useful.

Additionally, by directly boosting customers' pro-environmental self-accountability, pro-environmental self-accountability might encourage consumer interest in green purchases. To boost customers' pro-environmental self-accountability and encourage green buying, for instance, make consumers' environmental self-standards prominent or let consumers feel they haven't done enough to protect the environment.

7. Research limitations

Only household consumers were selected as participants. Although the sample is homogeneous, which can improve the experiment's internal validity; it also limits how broadly the experiment's findings can be applied. Future studies may use a different kind of sample to check the conclusion's generalizability.

In addition, we assessed customer preference for green products in comparison to conventional products, with consumer preference for green products acting as the dependent variable. Future studies could assess consumer green consumption using different metrics, like energy use and recycling.

The majority of an earlier study on green consumption focuses on its precursors. Few researchers have looked at the antecedents of green consumption. People don't make decisions in a vacuum in daily life. They make choices that are rooted in history. In other words, current decisions may be influenced by past actions. What effects would buy green items have on future purchasing choices? When given the option to choose between conventional and green items once more, what will consumers choose? Do they favor self-benefit or environmentally friendly products? Both options are reasonable (Mazar and Zhong, 2010; Cornelissen et al., 2008). Examining the conditions under which customers would prefer self-benefit items and the conditions under which consumers will prefer green products after they have adopted them.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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