


The influence mechanism of green advertising on consumers' intention to purchase energy-saving products: Based on the S-O-R model


Liru Li^{1*}, Biao Luo^{2*}, Ying Sun³ , and Fenfen Zhu¹

¹School of Management, University of Science and Technology of China, Hefei 230026, China;

²School of Management, Hefei University of Technology, Hefei 230009, China;

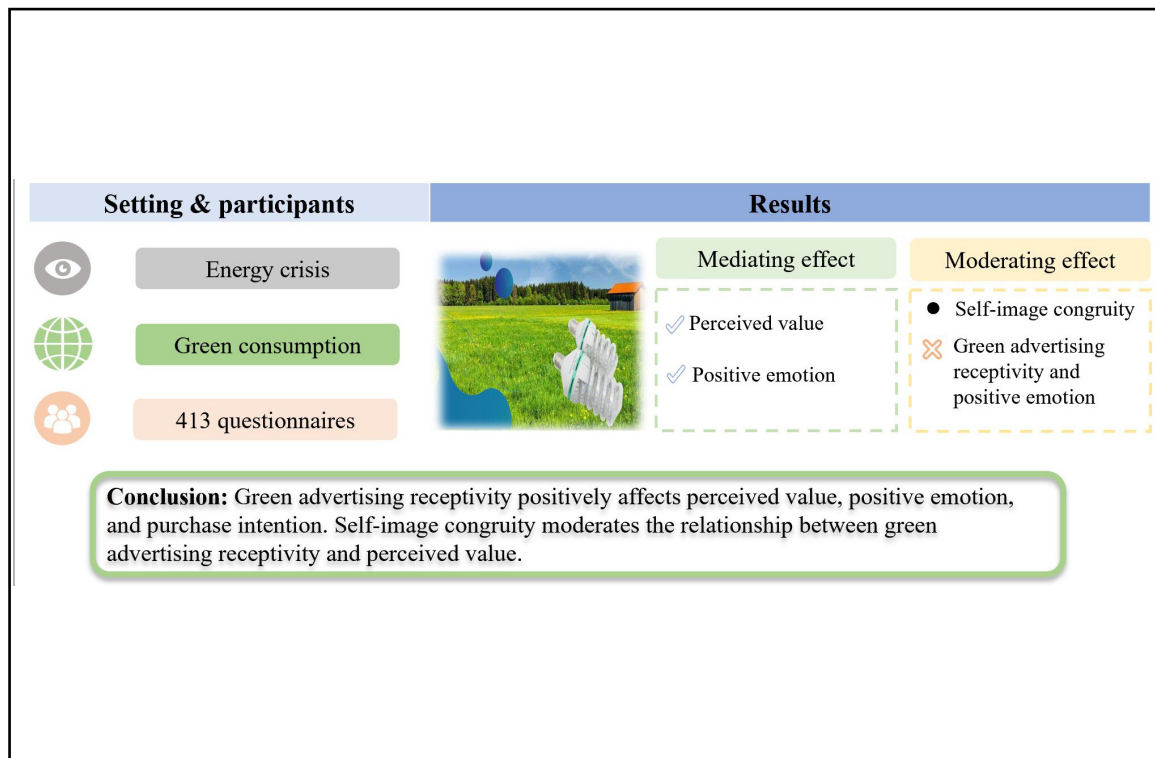
³School of International Economics and Management, Beijing Technology and Business University, Beijing 102488, China

* These authors contributed equally to this work

 Correspondence: Ying Sun, E-mail: suny11@btbu.edu.cn

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Graphical abstract




Except that SIC has no significant moderating effect on the GA and positive EM, all other hypotheses are verified.

Public summary

- Green advertising receptivity positively affects perceived value, positive emotion, and purchase intention.
- Self-image congruity moderates the relationship between green advertising receptivity and perceived value.
- Self-image congruity has no moderate effect on the relationship between green advertising receptivity and positive emotion.

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Abstract: Energy consumption leads to an energy crisis and environmental problems. Energy-saving consumption is of great significance to reduce energy consumption. Based on the stimulus-organism-response (S-O-R) framework, this research introduces perceived value and positive emotion and constructs a model in which green advertising affects consumers' energy-saving consumption. Meanwhile, based on congruity theory, this research explores the influence of self-image congruity. A field study was adopted, and a total of 413 questionnaires were collected. The results show that green advertising receptivity positively affects perceived value, positive emotion, and purchase intention. Self-image congruity moderates the relationship between green advertising receptivity and perceived value, but it has no moderating effect on the relationship between green advertising receptivity and positive emotion. On this basis, the contributions of this research and further research prospects are discussed.

Keywords: green advertising; perceived value; positive emotion; congruity theory; self-image congruity

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1 Introduction

With the rapid development of China's economy, the energy consumption of Chinese residents is growing at an alarming rate^[1]. At present, China has become the world's largest energy consumer and carbon emitter^[2]. There appears to be an obvious trend of continuous growth in energy consumption^[3]. The increase in energy consumption exacerbates energy shortages and other environmental problems^[4]. The use of energy-saving products can help reduce household energy consumption^[5]. To reduce energy consumption, it is necessary to conduct relevant research on how to increase consumers' willingness to purchase energy-saving products. At the same time, considering that the energy consumption of residents is caused by people's daily behavior, it seems more reasonable to study energy-saving behavior from the perspective of psychological behavior^[6].

The prerequisite for consumers to buy a product is to understand the product. For a product to be quickly known to consumers, it must be promoted. Green advertising is an important publicity tool^[7]. Previous research has shown that adding product selling points to green advertising can better persuade consumers to buy green products^[8]. Green advertising has the functions of informing, reminding, and persuading^[9]. Consumers can identify energy-saving products and know the characteristics of energy-saving products via green

advertising, such as energy-saving certifications of the products and energy-saving technologies used^[10]. Meanwhile, companies can quickly promote the environmental advantages of products. The research of Miller and Sinclair^[11] showed that green-oriented advertising can trigger purchase intentions. Therefore, green advertising can encourage consumers to buy energy-saving products.

Although previous literature has shown that green advertising can influence consumers' purchase behavior, the mechanism behind it is still unclear. Specifically, previous research has proposed that green advertising affects consumers' attitudes^[12, 13] and trust^[8], resulting in green purchase behavior. Davis^[14] believed that specific environmental claims promote positive cognition of products, which leads to product purchase intentions. However, consumers' purchase intentions are not only impacted by individual cognitions^[15], and emotions may play an important role^[16]. Buck et al.^[17] also confirmed that the persuasion process of green advertising is associated with the process of rationality and emotion. Green advertising can lead to noncognitive emotional processes by linking brands with natural imagery^[18]. The stimulus-organism-response (S-O-R) model suggests that green advertisements can trigger individual physiological and psychological changes and then produce behavioral responses. Therefore, based on the S-O-R model, this study introduces perceived value and positive emotion to explore the underlying

mechanism of the influence of green advertising on consumers' buying intentions.

Emotional green advertising is prone to generate positive affection^[12], and then affect consumers' perceptions^[7]. However, the initial attitude of consumers with low involvement in green advertising is negative because they do not like green advertising^[9]. The inconsistency between this initial attitude and the perceptions and emotions affected by green advertising can cause psychological deviations and lead to cognitive dissonance. Congruity theory points out that people adjust their cognition and behavior to maintain internal consistency to achieve psychological balance when the information received by the individual is inconsistent with the original attitude^[19]. Self-image congruity is an extended concept of congruity theory^[20,21]. In the context of green consumption, this construct is the result of the comparison between the image of green products or services and consumers' self-concept. In fact, after receiving the information, individuals will analyze and evaluate the received information^[22], while consumers concerned about the environment show greater interest in green information^[23], which indicates a preference for green among consumers driven by self-image congruity. Self-image congruity also affects consumers' perception of product brand value^[24]. Under the effect of self-image congruity, when consumers are exposed to advertisements that will affect their brand beliefs and attitudes toward advertising, they will form different feelings (emotions) and judgments (cognitions)^[25]. Therefore, this study takes self-image congruity as a boundary condition of the relationship between green advertising and consumer response. From the perspective of consumers' subjective initiative, the current study provides a new understanding of consumers' different psychological responses to green advertising.

This study contributes to the literature in three ways. First, this paper enriches the existing understanding of the mechanism of green advertising's influence on consumers' intention to buy energy-saving products. Previous studies on green advertising have mainly focused on the content design of advertising^[15] and the effect of advertising^[26], but have rarely explored its impact on consumers' purchasing behavior and internal mechanisms. Second, this study extends the S-O-R framework and enriches the connotation of the organism from the perspective of cognition and emotion. The theory of planned behavior (TPB) and the theory of reasoned action (TRA) are mainly used to study green behavior^[5,6], but these theories ignore the influence of noncognitive factors^[27], such as emotional factors^[8,28]. Finally, this study also examined the moderating effect of self-image congruity. Previous studies on consumer behavior have mainly focused on external pressure, such as social norms^[29] and peer pressure^[30], without considering consumers' subjective initiative, such as self-image congruity.

In general, based on the S-O-R framework and congruity theory, the current research aims to explore the impact of green advertising on consumers' willingness to buy energy-saving products and explore the mediating role of positive emotion and perceived value and the moderating role of self-image congruity. The remainder of this study is organized as follows. Section 2 focuses on the theoretical background and

hypotheses. Section 3 introduces the data collection and methodology. Section 4 presents the data analysis and results. The research results and implications are discussed, and the limitations of this study and further research prospects are proposed in Section 5.

2 Theoretical background and hypotheses

2.1 Green advertising receptivity and purchase intention

Banerjee et al.^[31] believe that advertisements that fulfill at least one of the following criteria are green advertisements: (i) including the relationship between the product/service and the biophysical environment both explicitly and implicitly; (ii) promoting a green lifestyle regardless of whether products/services are emphasized; and (iii) showing the image of corporate environmental responsibility. In this study, green advertising refers to the green information related to energy-saving products and emphasizes the overall environmental benefits of advertising^[13]. Green advertising receptivity refers to consumers' acceptance of green advertising^[8]. A large number of studies have established that there is a positive relationship between green advertising and consumers' green purchase intention^[32,33]. Green advertising can promote energy-saving products to consumers through TV, Weibo, TikTok, and other methods^[5]. When enough information is available, individuals can perform these behaviors and make decisions^[34]. Green advertising conveys energy-saving product information to consumers, and consumers analyze and evaluate the received information to make relatively reasonable decisions^[22]. Therefore, when individuals obtain information about energy-saving products and have a full understanding of them, they will make purchasing decisions. Therefore, we can assume:

H1: Green advertising receptivity positively influences consumers' purchase intention.

2.2 The mediating effect of perceived value and positive emotion

Perceived value has been extensively studied because it is believed that the main driving force of consumers' purchase intention is perceived value^[35]. Zeithaml^[36] put forward the concept of perceived value for the first time and suggested that perceived value is the overall evaluation between the benefits and sacrifices that consumers obtain from products. Woodruff^[37] believes that perceived value refers to consumers' preference and evaluation of product attributes and performance. In this study, perceived value refers to consumers' overall assessment of the benefits and costs of energy-saving products^[36]. When consumers think that the benefits they receive are equivalent to the costs, they will believe that they have been treated fairly^[38].

Green advertising can promote product characteristics and their environmental impact^[7], make consumers aware of the characteristics of products, such as energy savings and environmental protection^[39], and help consumers deeply understand the benefits they can obtain from such characteristics. In the marketing field, green advertising serves as an

environmental cue that acts as an external stimulus^[32]. The stimulus is related to the green information of energy-saving and environmentally friendly products, such as energy-saving technology, energy-saving certification, and test reports. The S-O-R model points out that the environment is the stimulus that affects the individual, and these stimuli (S) can lead to cognitive or emotional responses (R)^[40], which means that consumers' cognition and emotions will change. Marketers regard it as a marketing strategy and use the visual image of green advertising to trigger the psychological image of consumers, which influences their evaluation of product attributes^[15].

In addition, previous research has shown that green advertising can affect consumers' perceived value. Wang et al.^[41] believed that when consumers obtain green information related to remanufactured products, including energy savings, material savings, and emission reduction, it will increase consumers' perceived value. Similarly, in green advertising, if green advertising indicates that energy-saving products can reduce household energy consumption and user costs during the product's life cycle, consumers' perceived value of the product will increase. Therefore, if people have a higher acceptance of green advertising, they will obtain more information about energy-saving products and thus perceive a higher level of value of energy-saving products.

However, blindly emphasizing the green nature of the product does not guarantee its good sales because some companies promote their products by washing green, causing consumers to be reluctant to buy their products^[42]. Only when consumers perceive the green attributes and other value attributes of the product are they more likely to buy it^[43]. For energy-saving products, consumers will be more inclined to buy energy-saving products if they perceive that energy-saving products can not only reduce energy consumption (green attributes) but also save usage costs (value attributes).

Emotion refers to an individual's emotional response to an event or issue (such as positive or negative), including happiness, relaxation, tension, and worry^[44]. In this study, positive emotion is defined as a positive psychological state when performing certain behaviors^[6]. After the individual is stimulated by the external information of the green advertising (stimuli), the individual's positive emotions will be elicited along with cognitive factors (perceived value), which will produce a strong sense of pleasure. This emotional response is the emotion and feelings evoked by the advertisement. Previous studies have shown that visually stimulating advertisements such as pictures can easily mobilize consumers' positive emotions^[45]. Similarly, when an individual sees the information on the characteristics of products, such as energy savings and environmental protection, conveyed by the green advertisement, the individual will deeply understand the importance of green environmental protection, which triggers emotional changes.

The role of positive emotion is important in implementing pro-environmental behaviors, especially in protecting the environment^[46]. Emotion is considered to be one of the factors influencing consumer behavior^[33], which helps explain the changes in the consumer decision-making process^[47]. Previous studies have shown the effect of emotion on customer

response. Swim et al.^[48] believed that positive emotion significantly affects consumers' intention to purchase energy-saving products. Allen et al.^[49] found that the positive emotional response caused by advertising can produce purchase intention. Wang et al.^[6] thought that the positive anticipated emotion of residents positively influences their intentions to engage in electricity-saving behavior. Similarly, in the context of energy saving, when consumers believe that energy-saving products are environmentally friendly and have a positive emotion for energy-saving products, they are more inclined to buy energy-saving products. In addition, the second part of the S-O-R model suggests that certain purchase behaviors may occur, such as purchase intention, after consumers undergo complex physiological and psychological reactions^[40]. Hence, we can assume the following:

H2a: Green advertising receptivity has a positive effect on perceived value.

H2b: Green advertising receptivity has a positive effect on positive emotion.

H3a: Perceived value positively influences a consumer's intention to purchase energy-saving products.

H3b: Positive emotion positively influences a consumer's intention to purchase energy-saving products.

2.3 The moderating effect of self-image congruity

Self-concept is a series of cognitions of the individual about the self^[49]. That is, what kind of person a person thinks he is and what kind of things he can do, which forms and shapes his self-image^[50]. Self-image congruity refers to the degree of matching between self-image and product or service image^[51]. Self-concept will affect people's processing and interpretation of information. People tend to pay attention to, process and memorize information similar to themselves^[50]. For the same advertising, there are different patterns of consumers' perceptions and behavioral consequences^[18]. In the Chinese context, people pay more attention to social norms and face and are more susceptible to external pressure, so they pay more attention to self-image. Therefore, they may choose a status signal product that matches their own^[52].

Green advertising is also a signal that may be a marketing strategy of enterprises^[8]. According to congruity theory, when the information received by an individual matches his or her self-image, he or she will reach a state of self-congruity and tend to buy products or services consistent with his or her image^[53]. If consumers think that the energy-saving information of a product matches their self-image, they tend to have a positive attitude toward the product^[54] and have a good impression and interest. Sirgy^[21, 55] believes that consumers prefer products that match their self-image, self-positioning, and self-worth. People tend to maintain or even strengthen objects that are consistent with their self-concept and perform supportively toward them^[20]. In contrast, when the information received by the individual is inconsistent with the self-concept, people will experience discomfort and then adjust the state to reduce discomfort^[19]. Similarly, according to cognitive dissonance theory, if individuals are unwilling to change their attitudes and beliefs, cognitive disharmony may occur^[56]. Individuals tend to reduce cognitive dissonance when they feel

uncomfortable with cognitive dissonance^[57]. Moreover, congruity theory is also widely used in advertising and marketing to express the perception of matching or similarity^[58]. For the same green advertising, due to the difference in the matching between self-concept and green advertisement, people's acceptance of green information varies from person to person^[8]. Therefore, for a given green advertisement, when consumers' self-image congruity is high, they can easily support green products and enhance perceived value. The above discussion shows that the moderating role of self-image congruity in green advertising on perceived value is positive.

Based on congruity theory, when individuals feel that they fit in with the company, they will have positive affection^[59]. Green advertising conveys information to consumers, and self-consistency encourages consumers to process product/brand-related information^[53]. Consumers prefer products/brands that are consistent with their self-image because their self-concepts can be maintained and enhanced^[60]. Hong and Zinkhan^[61] believed that when the consistency between the advertising appeals and the consumer's self-concept is higher, the consumer's preference for this product is stronger. The higher the degree of matching between advertising elements and the consumer's self-image, the more positive the consumer's state^[62]. The consistency of advertising and self-image will produce a positive attitude toward advertising and branding^[58]. Therefore, we can predict that the higher the consistency of green advertising and self-image, the higher the positive emotion of consumers. Hence, we can assume:

H4a: When self-image congruity is higher, the effect of green advertising receptivity on perceived value will be stronger.

H4b: When self-image congruity is higher, the effect of green advertising receptivity on positive emotion will be stronger.

Based on the above analysis, the research framework is shown in Fig. 1.

3 Data collection and methodology

3.1 Data collection and sample

This study uses a survey method and collects data both online and offline. To obtain scientific and reasonable data, we first conducted a pilot survey to obtain important feedback. We initially distributed 50 questionnaires, discussed them according to the feedback, and revised the questionnaires. It is worth noting that based on preliminary research, the time required to complete the questionnaire is usually approximately 5 min. Then, the formal survey was conducted online through the professional online survey website to collect data randomly. Meanwhile, the questionnaire was distributed at the entrance of shopping malls, such as the SUNING mall, and gifts were given to the participants. In the questionnaire, the energy-saving lamp is taken as an example of energy-saving products because the public is familiar with them. To ensure the representativeness of the sample results, only respondents with knowledge of energy-saving products were allowed to participate in the questionnaire survey.

A total of 433 questionnaires were received, with 230 questionnaires collected online and 203 questionnaires collected offline. After excluding the questionnaires with missing values and with the same answers on the main different variables, there are 221 valid online questionnaires and 192 offline valid questionnaires. Finally, data from 413 valid questionnaires were collected for questionnaire analysis. Participant demographics are shown in Table 1.

Since our data are collected online and offline, we conduct a *t*-test on independent samples. According to the *t*-test, there

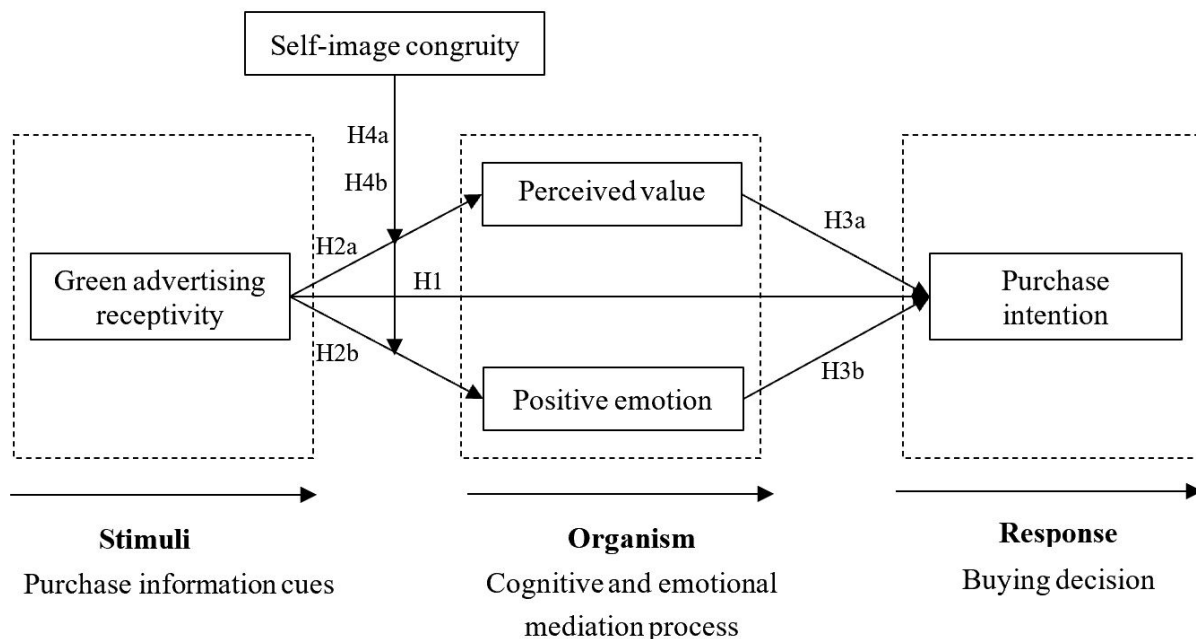


Fig. 1. The research framework of intention to purchase energy-saving products.

Table 1. Consumer characteristics.

Variables	Item	Frequency	Percentage
Gender	Female	175	42.4%
	Male	238	57.6%
Age	Under 20	17	4.1%
	20–29	196	47.5%
	30–39	181	43.8%
	40 and above	19	4.6%
Monthly income	Less than ¥ 2000	104	25.2%
	¥ 2001–5000	100	24.2%
	¥ 5001–10000	170	41.2%
	¥ 10001 and above	39	9.4%
Education level	High school and technical secondary school	14	3.4%
	College degree	203	49.2%
	Bachelor and above	196	47.5%
Total		413	100%

is no significant difference between the data collected online and offline. Thus, the data can be combined for analysis. In addition, to ensure the accuracy of the statistical analysis results, this paper adopts the most commonly used Harman

single-factor method to test common method bias. In the study, common method bias is not an issue because the results indicate that the cumulative variance interpretation rate is 78.33%, and the variance occupied by the first construct is 17.74%, which is smaller than the recommended standard of 40%.

3.2 Measures and analysis

The scales of this research are adopted from the extant literature and were slightly adjusted based on the context. Green advertising receptivity refers to consumers’ acceptance of green advertising^[6]. It was measured by three items adapted from Do Paço et al^[63]. Perceived value refers to consumers’ overall assessment of the benefits and costs of energy-saving products^[36]. Four measurement items of perceived value were adapted from Wang et al^[41]. Positive emotion is defined as a positive psychological state when performing certain behaviors^[6]. Items of positive emotion were adapted from Lee et al^[64]. Self-image congruity refers to the degree of matching between self-image and product or service image^[51]. Self-image congruity was measured by three items adapted from Kourouthanassis et al^[65]. Green purchase intention refers to the probability that consumers try to buy energy-saving products under the stimulation of marketing^[66]. The purchase intention scale was adopted from Xu et al^[67]. These items are given in Table 2. A 5-point Likert-type scale was applied to all measurement items (1= “strongly disagree” and 5= “strongly agree”).

Table 2. Constructs and measurement items.

Construct	Items	Source
Green advertising receptivity		
GA1	I consider they are good when products use green information in their advertisements.	Do Paço et al. ^[63]
GA2	I tend to pay attention to products with energy-saving label through green advertising.	
GA3	I tend to focus on advertising information that talk about the environment.	
Perceived value		
PV1	Energy-saving products can generate more benefits regarding environmental protection.	Wang et al. ^[41]
PV2	The environmental protection performance of energy-saving product can meet my expectations.	
PV3	The environmental protection performance of energy-saving product can offer great value to me.	
PV4	Energy-saving products care for energy saving and environmental protection to a greater extent than other products.	
Positive emotion		
EM1	Buying energy-saving products will make me excited.	Lee et al. ^[64]
EM2	Buying energy-saving products will make me happy.	
EM3	Buying energy-saving products will make me feel good.	
EM4	Buying energy-saving products will satisfy me.	
Self-image congruity		
SIC1	Buying energy-saving products help maintain my image and character.	Kourouthanassis et al. ^[65]
SIC2	Buying energy-saving products help reflect who I am.	
SIC3	Buying energy-saving products fit well with my image.	
Purchase intention		
PIN1	I plan to buy energy-saving products in the future.	Xu et al. ^[67]
PIN2	I will buy energy-saving products in the future.	
PIN3	I make an effort to buy energy-saving products in the future.	

4 Data analysis and results

First, we used SPSS 20.0 for descriptive statistical analysis and obtained the mean and correlation of variables. Then, confirmatory factor analysis (CFA) was adopted to test the reliability and validity of the model. Finally, structural equation modeling (SEM) was used to test the relationship among the proposed constructs: green advertising receptivity, perceived value, positive emotion self-image congruity, and purchase intention. Meanwhile, bootstrapping analysis was used to examine the mediating effect of self-image congruity.

4.1 Measurement model analysis

According to the results of CFA, we obtain the overall fit index. These results indicate that χ^2/df was 1.44 and less than 3.00, GFI was 0.96, NFI was 0.97, TLI was 0.99, AGFI was 0.94, CFI was 0.99, and RMSEA was 0.03. All indices reached the standard, meaning that the measurement model was acceptable.

The construct reliability can be measured by Cronbach's alpha value and the composite reliability value^[68]. As described in Table 3, the composite reliability values ranged from 0.848 to 0.916, and the Cronbach's alpha values ranged from 0.846 to 0.916. The recommended values of the composite reliability and the Cronbach's alpha are 0.700, which indicates that the reliability of the variable is sufficient. Loadings are above the threshold level of 0.700, and the values of the AVE are larger than 0.500, which shows that the convergent validity of the scale is very good. Moreover, the square root of AVE of the individual variable was greater than the shared variances of the interconstruct and correlations between the variables, which supports the acceptability of discriminant validity (see Table 4). These results indicate that the reliability and validity of each construct are acceptable.

Table 3. Results of the measurement model.

Item	Loading	Composite reliability	Cronbach's alpha	AVE
GA1	0.891			
GA2	0.850	0.884	0.882	0.718
GA3	0.798			
PV1	0.846			
PV2	0.807	0.900	0.899	0.692
PV3	0.828			
PV4	0.846			
EM1	0.806			
EM2	0.739	0.848	0.846	0.583
EM3	0.698			
EM4	0.806			
SIC1	0.882			
SIC2	0.902	0.916	0.916	0.785
SIC3	0.874			
PIN1	0.843			
PIN2	0.859	0.881	0.881	0.713
PIN3	0.830			

Table 4. Means, standard deviations (SD), and correlations.

	GA	PV	EM	SIC	PIN
GA	0.85				
PV	0.54**	0.83			
EM	0.56**	0.60**	0.76		
SIC	-0.15**	-0.22**	-0.13*	0.89	
PIN	0.52**	0.55**	0.53**	-0.17**	0.84
Means	3.56	3.67	3.85	3.23	3.73
SD	1.08	1.22	1.10	1.27	0.93

The diagonal boldface is the square root of AVE. *shows significance at the 0.05 level; **shows significance at the 0.01 level.

4.2 Structural model testing

The result of model fitness analysis revealed that the χ^2/df was 2.139, and the other indicators (GFI=0.94, NFI=0.95, IFI=0.97, AGFI=0.92, CFI=0.97, and RMSEA=0.05) were also acceptable. It shows that the model of the study fits very well with the structural model. As shown in Table 5, green advertising receptivity positively and significantly influences perceived value ($\beta=0.78, t=11.70, p<0.001$), positive emotion ($\beta=0.71, t=11.91, p<0.001$), and intention to purchase energy-saving products ($\beta=0.24, t=3.30, p<0.001$). It shows that H1, H2a, and H2b are supported. Perceived value ($\beta=0.22, t=5.02, p<0.001$) and positive emotion ($\beta=0.21, t=3.61, p<0.001$) have a positive effect on consumers' intention to buy energy-saving products. These results support H3a and H3b.

The interaction term between green advertising and self-image congruity is positive and significant for perceived value ($\beta=0.12, t=3.03, p<0.05$), indicating that self-image congruity positively moderates the effect of green advertising receptivity on the perceived value of energy-saving products. It is demonstrated that consumers with higher self-image congruity have higher perceived value for energy-saving products for the given green advertising. Therefore, the study supports the positive effect of green advertising receptivity on perceived value and the positive moderating role of self-image congruity in green advertising on perceived value. However, the interaction term between green advertising and self-image congruity is not significant for positive emotion ($\beta=0.03, p>0.05$), showing that self-image congruity has no significant impact on the relationship between green advertising receptivity and the positive emotion of energy-saving products.

Table 5. Path coefficients of the structural model.

Path	Path coefficient	t value	Hypothesis	Results
GA → PIN	0.24	3.30***	H1	Supported
GA → PV	0.78	11.70***	H2a	Supported
GA → EM	0.71	11.91***	H2b	Supported
PV → PIN	0.22	5.02***	H3a	Supported
EM → PIN	0.21	3.61***	H3b	Supported
GA×SIC → PV	0.12	3.03*	H4a	Supported
GA×SIC → EM	0.03	0.81	H4b	Not supported

*** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$.

4.3 Mediating effect analysis

To test the mediating effects of perceived value and positive emotion in this study, the bootstrapping analysis suggested by Jose^[69] was performed with AMOS 21.0. As described in Table 6 (the number of samples is 5000 with a confidence level of 95%), the results did not cover 0, which indicated that green advertising receptivity has a significant indirect impact on purchase intention through perceived value and positive emotion. Thus, the influence of green advertising receptivity on consumers' purchase intention is mediated by perceived value and positive emotion.

5 Discussion and conclusions

5.1 Conclusions

On the basis of S-O-R theory and congruity theory, this research explores how green advertising receptivity influences consumers' purchase intention. Specifically, this study not only reveals the "black box" between green advertising and consumers' purchase intention through the study of perceived value and positive emotion but also examines the boundary conditions of the impact of green advertising on the intention to purchase energy-saving products.

The results show that green advertising receptivity can positively influence perceived value, positive emotion, and purchase intention. Specifically, green advertisements can influence consumers' cognition of products^[4]. Moreover, green advertising highlights that energy-saving products are beneficial to environmental protection^[8], so they can stimulate consumers' desire to protect the environment and lead to positive emotions. This is because the green information conveyed by green advertising plays an important part in meeting the needs and wishes of consumers^[70].

The results indicate that perceived value has a significant positive impact on purchasing intention. They are consistent with the findings of Wang et al.^[71] When faced with the choice of products, if the perceived value of energy-saving products is low, it may reduce consumers' willingness to buy. They cannot perceive the value of energy-saving products and believe that the benefits they obtain are far less than the costs paid, so they are reluctant to buy this product. In addition, our results show that positive emotion positively influences purchasing intention. Emotion can play a significant part in buying behavior. Consumers affected by positive emotions believe that they can make contributions to the environment^[45]. Therefore, emotion is positively correlated with consumers' purchase intentions.

Self-image congruity positively moderates the influence of green advertising receptivity on perceived value. As mentioned before, self-image congruity is related to the degree of individual matching and a certain preference for products^[21]. When individuals see green advertising and realize that the

information of the promoted products is not what they are pursuing, they tend to ignore these products or ignore the value of these products. However, contrary to our expectations, self-image congruity does not moderate the relationship between green advertising and positive emotion. Emotion may be an individual's temporary and strong affective reactions to the current external stimulus^[72]. This response is emotional and rapid, and there is no time to match with self-image. Therefore, we believe that self-image congruity has no significant moderating effect.

5.2 Implications

In practice, this study provides important implications for saving energy and electricity. This research explored the factors that influence consumers' intention to purchase energy-saving products. The findings are helpful for governments and enterprises to motivate consumers to buy energy-efficient products. Increasing consumers' receptivity about green advertising, enhancing the value of energy-efficient products, and arousing the positive emotion of consumers enhance the intention to purchase energy-saving products. The results show the importance of green advertising receptivity, perceived value, and positive emotion.

Green advertising receptivity has a significant impact on perceived value and positive emotion. Enterprises should promote green advertising based on the consistency of the relationship among the attributes, values, and characteristics of energy-saving products^[73], which helps to shape or strengthen consumers' feelings or ideas about energy-saving products^[74]. Green advertising should spread more specific information rather than general information, such as the energy-saving effect and environmental benefits of energy-saving products, to enhance consumers' understanding of energy-saving products^[5]. Enterprises should understand the significant effect of perceived value on consumers' purchase intention. By introducing energy-saving products to consumers, consumers can understand the advantages of cost-saving products in the life cycle of energy-saving products, and improve consumers' perceived value of energy-saving products. It is worth noting that when consumers perceive a higher value of energy-efficient products, they are more likely to buy the products.

Marketers must be aware that it is very important to stimulate consumers' positive emotions about energy-saving products. A successful advertisement is one that can move people and stimulate people's emotions in a certain way^[71]. Therefore, when making green advertisements, companies should set up elements that can arouse consumers' emotions to foster their positive emotions about energy-saving products^[15]. In addition, based on the findings of this research, marketers should understand that it is very important to stimulate consumers' positive emotions about energy-saving products. To induce consumers' positive emotions toward energy-saving products, marketers should allow consumers to watch or experience green advertisements^[75].

The results indicate that self-image congruity positively moderates the influence of green advertising receptivity on perceived value. The results show that enterprises should attach importance to creating and delivering self-image congruity. Managers can focus on certain types of customers and

Table 6. The mediating effect analysis.

Mediation paths	Indirect effects	Lower bound	Upper bound	P value
GA-PV-PIN	0.192	0.106	0.285	0.000
GA-EM-PIN	0.164	0.072	0.260	0.001

conduct special marketing surveys to understand the self-concept of target customers^[20]. By formulating unique green advertisements, the company effectively conveys information on energy-saving products to target groups to enhance their perceived value of energy-saving products.

The government plays an important role in further promoting the development of energy-saving products. First, to strengthen the self-image of customers, the government can make them notice the benefits of energy-saving products to the environment and society through green advertising for public welfare. Such education and publicity can improve consumers' awareness of green energy conservation and shape a green image^[6]. Second, considering the importance of consumers' perceived value, the government should improve and standardize related management, such as the energy efficiency labeling system, so that consumers can recognize the energy-saving effects of products^[5]. The quality supervision department strengthens supervision, creates a good energy-saving market atmosphere, makes consumers aware of the energy-saving effects of products, and improves the perceived value of energy-saving products.

5.3 Limitations and future work

First, the influencing factors of purchasing intention in this paper are from the perspective of cognition and emotion. The influence of noncognitive factors, such as personal habits and moral norms, is not considered. Future research will be focused on noncognitive factors. Second, this research was conducted in the context of China. Further research will be done in other countries to determine whether the results of this research can be extended to the situations of other countries. Finally, this study's data are cross-sectional, which might not show the dynamic relationships among green advertising, perceived value, positive emotion, and purchase intention in the green field. In the future, longitudinal research will be conducted to test the proposed model.

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Conflict of interest

The authors declare that they have no conflict of interest.

Biographies

Liru Li is a master's student at the School of Management, University of Science and Technology of China. Her primary research interests include green consumption and sustainable development.

Biao Luo is currently a Professor at the School of Management, Hefei University of Technology. He received his Ph.D. degree from the University of Science and Technology of China in 2004. His research mainly focuses on consumer behavior and marketing.

Ying Sun is currently an Associate Professor at Beijing Technology and Business University. She received her Ph.D. degree from the University of Science and Technology of China in 2020. Her research mainly focuses on decision analysis and green marketing.

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