

Article

The Impact of Green Advertising Information Quality Perception on Consumers' Response: An Empirical Analysis

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Abstract: Green advertising is one of the important tools for companies to carry out marketing activities, and it is especially important for green brand owners to improve the persuasive effect of green advertising. Existing studies focus on the effectiveness of green advertising from the level of message content and message expression, but there is little research to assess the advertising effectiveness of green advertising being “well said” from the perspective of message quality. This article constructs a theoretical framework based on the theory of communication persuasion to assess the effect of perceived message quality on the consumer's green response to green advertising. Study 1 constructs an econometric regression model by crawling unstructured data, such as green ad review texts through Python, and verifies that consumers' green responses (green purchase intention and green sharing intention) are mainly influenced by green ad information usefulness, information attractiveness and information truthfulness. Study 2 further tested the direct role of perceived green advertising information quality on the consumer's green response by constructing structural equation models with situational experimental data, and verified the mediating role of green competence trust and green value trust in the process of perceived green advertising information quality influence on the consumer's green response. These findings provide a new theoretical perspective on the effectiveness of green advertising, while providing practical guidance for green brand owners to develop green advertising strategies and assess green advertising quality.

Keywords: green advertising; information quality; green trust; consumer response



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1. Introduction

In the context of the overall green transformation of production and lifestyle, people's demand for green products is increasing. Green advertising, as one of the effective communication methods between companies and consumers, can stimulate the consumer's advertising attitude and purchase desire for green products [1]. In order to increase green market share, brands are using green advertisements to promote their environmental claims for green marketing, such as “1.2 kWh a night, 2.7 kWh a day” and other green advertising slogans which are popping up all over life. Obviously, these green advertisements aim to convey the green message of products and increase consumers' willingness to purchase green products, but their information quality is questioned by consumers. Information quality refers to the overall assessment of the received information by the individual consumer, i.e., whether the information received by the receiver is persuasive [2]. What is the theoretical impact of the green advertising message quality on the consumer's green response? Indeed, what is the mechanism of action in this influence process? This will be the core and focus of this paper's exploration.

The current research on the persuasive effect of green advertising focuses on the “what” and “how” of green advertising, while the evaluation of the effect of consumers' perception of green advertising as being “well said” is rarely reported. The “what” of green advertising is to enhance the persuasive power of advertising by designing reasonable green advertising appeal content, which generally includes altruistic and self-interest appeals [3,4], emotional

and rational appeals [5], invisible and explicit appeals [6], abstract and concrete claims [7], and fear appeals [8], etc. The “how” of green advertising is to stimulate positive green responses from consumers by designing appropriate green advertising messages, and green advertising messages are usually divided into benefit frames and loss frames [9,10]. In general, the “what” and “how” of green advertising is the design of green advertising marketing strategies from the standpoint of the company or brand. However, there is less research to assess the quality of green advertising messages from the receiver side, i.e., to assess how well green advertising “says it”, and the response of green advertising on this basis at the consumer behavior level remains unclear.

Based on this, this study attempts to argue and answer the following two questions from the perspective of information quality perception using multi-source heterogeneous data. First, the unstructured data, such as green ad review texts from crawlers, are used to construct an econometric model to verify the direct effect of different dimensions of green ad information quality perception on consumers’ green purchase intention and green sharing intention (Study 1). Second, the questionnaire data obtained from the situational experiment was used to construct a structural equation model to verify the inner psychological mechanism of green advertising information quality perceptions, evoking consumers’ green purchase intention and green sharing intention (Study 2). The exploration of the above issues can not only theoretically enrich relevant research in the fields of green advertising, but also provide practical guidance value for enterprises to develop and implement high quality green advertising marketing strategies in green marketing practice.

2. Literature Review

2.1. The Quality of Green Advertising Information

Green advertising is a new advertising concept that takes environmental protection and human health as the theme, and uses green products and green consumption concepts as the main subject of communication to convey environmentally friendly messages, such as ecological protection and resource conservation to consumers [11]. In fact, the high information quality perception of green advertising can enhance the persuasive effect of green advertising by strengthening the information of environmental protection attributes received by consumers, and then influence the consumption decision. At present, domestic, and foreign scholars, have not yet agreed on the selection of information quality evaluation indicators, but it has become a consensus that information quality is a multidimensional concept, i.e., it can be divided into multiple dimensions in different contexts. In terms of micro dimensions, Wang and Storey [12] measured information quality based on accessibility, usefulness, comprehensibility, and trustworthiness. D’souza and Taghian [13] believed that green advertising information quality should contain dimensions such as entertainment, trustworthiness, and reliability. In the study by Zhu et al. [14], adequacy, reliability, relevance, comprehensibility, completeness, accuracy, and factuality, were identified as key measures of information quality. In terms of macro dimensions, Jiang et al. [15] consider information quality as a multidimensional variable consisting of information content quality, information presentation quality, and information utility quality. The division of information quality dimensions in different contexts provides the basis for the division of perceived information quality dimensions of green advertising in this paper.

2.2. Consumer Green Response

Consumer response is the actual output of a company’s marketing behavior, which is the psychological and behavioral reflection of the consumer’s response to marketing stimulus, and is also the comprehensive embodiment of the consumer’s attitude and willingness to act. Consumer response can be divided into two levels: internal response refers to the internal psychological state of consumers, which is their perception of their own psychological activities; external response is the reputation evaluation, loyalty, word-of-mouth recommendation, and purchase intention, etc. generated by the consumer’s behavior towards the company. Accordingly, consumer green response is a consumer response

in a green-related context. Domestic and international scholars have assigned different operationalized concepts to consumer response. Barone et al. [16] divided consumer response into three dimensions: corporate attitudes, willingness to donate, and willingness to purchase products in a good cause marketing context. Grappi et al. [17] divided consumer response into two dimensions: negative word-of-mouth communication, and boycott behavior, in their study of corporate failures. Willingness to spread word-of-mouth and brand recommendation as indicators of advertising effectiveness assessment are also confirmed by scholars such as Hogan et al. [18], Becerra [19], and Mansoor and Paul [20]. Brand recommendation is an emotion centered evangelistic behavior by which consumers try to convince others to use their favorite brands [21], which shows that brand communication is an important aspect of consumer behavioral response. Whereas advertising attitudes, brand attitudes, and behavioral intentions, are considered to be the best indicators of advertising effectiveness [22], with behavioral intention indicators being the most widely used. In the context of green advertising, Dai and Sheng [23] measured the consumer's response to green advertising with a single dimension of green purchase intention. Gong et al. [24] studied how green brand positioning strategies positively influenced consumer responses, and measured the consumer's green response with two dimensions of green brand attitude and green purchase intention. Lee and Cho [25] measured the consumer's response to green advertising with three dimensions: green attitude, green brand attitude, and green purchase intention. It can be seen that there are differences in the way consumers respond in different research contexts, but behavioral intention is an important dimension for most researchers to measure consumers' green response.

2.3. Consumer Green Trust

Consumer trust refers to the consumer's psychological expectation of the trustworthiness and sincerity of corporate behavior, based on relevant information they have learned and their personal experiences in the face of risk uncertainty. Trust plays a key role in consumers' willingness to respond to CSR initiatives [26]. In the context of a comprehensive green transformation of production and lifestyle, companies are increasingly focusing on environmental benefits and the concept of green trust has emerged. Green trust is the application of the conceptual connotation of consumer trust to the field of green marketing, referring to the consumer's willingness to trust enterprises to implement environmental protection strategies and fulfill their social responsibilities, and this willingness to trust originates from the consumer's psychological expectations and judgments of enterprises to provide green products or services and actively build green brands [27]. Green trust fully reflects corporate competence, benevolence, and reliability, as well as consumers' combined rational and emotional perceptions of the company [28]. Existing studies have mainly studied the formation mechanism of green trust in terms of consumer psychological factors, ignoring the influence of external contextual factors, such as the quality of green advertising information on building green trust. Meanwhile, green trust is often applied to unidimensional constructs, and there is little research to further explore the dimensional division of green trust based on the relatively mature concept of trust. Augstin and Singh [29] divided consumer trust into two dimensions: affective trust, and cognitive trust, in the context of relationship marketing research. Coulter [30], on the other hand, subdivided consumer brand trust into competence trust, honest trust, and goodwill trust. Suh and Han [31] argue that trust specifically includes the three main characteristics of competence, benevolence, and integrity. McKnight et al. [32] classify trust into competence trust, goodwill trust, honest trust, and predictability. Chen et al. [33] use environmental image, environmental function, environmental statement, and product performance, as the measures of green trust as a core indicator.

From the results of the above review, it can be seen that: (1) The existing research results on "what to say" and "how to say" of green advertising are relatively abundant, but the research results on evaluating "well said" green advertising from the perspective of information quality are relatively insufficient. The research results are relatively insufficient.

Evaluating the information quality of green advertising from the perspective of consumers is more helpful for the green brand to grasp the real needs of consumers in time and then develop more effective marketing strategies. Therefore, it is necessary to conduct an in-depth study on green advertising information “well said” and its result effect from the perspective of information quality. (2) The division of information quality dimensions has different division bases according to the differences of research contexts. Existing studies have both macro-level division (such as content quality, effect quality, expression quality, etc.) and micro-level division (such as relevance, timeliness, interestingness, etc.), but the research on green advertising as the research object to divide the green advertising information quality dimensions is less involved. This study selects specific micro dimensions to evaluate the quality of green advertising information from the macro level, which has certain significance to enrich the study of green advertising “well said”. (3) Consumers’ responses to green advertising behaviors are mainly focused on consumer attitudes and purchase intentions. In fact, in addition to traditional response methods, consumers’ online sharing behaviors in the digital economy are more relevant to the dissemination of green brand values and the transmission of green consumption concepts in a larger scale with the advantage of Internet information interaction. Therefore, it is necessary to study the impact of green advertising information quality on consumers’ online sharing behavior in order to maximize the delivery of brand green values. (4) Scholars have done more research on consumer trust and its dimensional division, but have not yet focused on the perspective of consumer trust in brand green attributes. Green trust is more focused on the trust in the brand’s delivery of green value based on the traditional consumer trust connotation. Therefore, to summarize the segmentation dimension of the consumer’s trust in brand greenness on the basis of traditional consumer trust segmentation dimension will be one of the aspects that this paper is devoted to research. (5) Although green advertising claims and message frames can influence consumers’ green purchase intentions and advertising attitudes, it is not clear how they affect consumers’ green responses from the perspective of message quality and the mechanisms involved, and this core issue will be explored in detail in this paper.

3. Theoretical Background and Hypotheses Development

3.1. The Spread Persuasion Theory

The theory of communication persuasion was proposed by Hovland, an American psychologist, which believes that the persuasion process is a process of information transmission; that is, the persuader transmits information to the persuasive object through some form or medium, with the purpose of causing changes in the psychology of the persuasive object, thus making the attitude of the persuasive object and the behavioral intention change in a specific direction [34]. The change of individual attitude depends on four factors: persuader, persuasive message, persuasive situation, and persuasive target. In the process of individual persuasion, the influence of persuasive message on individual attitude mainly depends on the strength of the persuasive message arguments; stronger arguments are more credible and more likely to cause changes in individual attitudes and beliefs, and more likely to influence individual judgment and decision-making. In general, the quality of the message is an important aspect of the strength of the argument, i.e., the higher the quality of the message, the more credible and persuasive it is.

3.2. Concept Definition

Firstly, looking at existing studies, multidimensional variables information quality cannot be separated from their specific research scenarios. As the depth of the study increases, the dimensions of information quality are constantly updated according to the research scenario. This study draws on the work of Zhu et al. [14] and Jiang et al. [15] to assess the perceived information quality of green advertising at three levels: information utility, information expression, and information content, and identifies information usefulness, information attractiveness, and information authenticity, as the subdivision measurement

dimensions. Information usefulness means that the information conveyed by green advertisements can meet the actual needs of individual consumers and solve the environmental problems and product problems that users are concerned about. Information attractiveness means that green advertisements are original in terms of information expression, bring consumers the experience of viewing pleasure and delight, and have a strong attraction to consumers. Information truthfulness means that the content of the green ad reflects the actual information truthfully, and that the environmental and other information conveyed is true and reliable, and there are no logical errors in the description.

Secondly, this study selects behavioral intention as the main indicator to measure consumers' green response, drawing on studies such as Hogan et al. [18] and Dai and Sheng [23], to measure the level of consumers' green response by the two-dimensional variables of green purchase intention and green sharing intention. Green purchase intention mainly measures the consumer's subjective tendency to choose a specific product, i.e., the consumer's likelihood of purchasing the green brand after being stimulated by green advertising messages; green sharing intention mainly measures the consumer's likelihood of sharing information related to the green brand, i.e., the consumer's likelihood of positive word-of-mouth (BOM) about the green brand after being stimulated by the green advertising messages [19].

Finally, this study extends the connotation of "green" to the dimensions of consumer trust and analyzes the subdimensions of green trust. Drawing on Chen's [35] definition of the connotation and concept of green trust, and Coulter's [30] division of consumer trust into dimensions of competence trust, honesty trust, and goodwill trust, considering that honesty trust and goodwill trust are value characteristics and difficult to distinguish in terms of connotation and measurement [32], this study integrates quality trust and goodwill trust into green value trust, and competence trust is extended to green competence trust. Specifically, green competence trust refers to the consumer's belief that a green brand has the ability to fulfill its environmental commitments and produce high quality green products; green value trust refers to the consumer's belief that the green brand will care about the earth's environmental interests, ensure that the earth's environmental interests are not harmed, and present the value of "saving the earth".

3.3. Information Quality Perception on Green Response

The strength of arguments in green advertising messages is an important factor in consumer judgment, with green ad with strong arguments being the most effective [36]. Some studies have found that consumers prefer high-quality brand messages because they reflect higher reliability and provide more positive signals [37]. For example, Shoenberger et al. [38] and Pittman et al. [39], found that consumers' perceived authenticity of brand messages is key to promoting advertising success, i.e., message authenticity promotes a persuasive mechanism for consumers to generate green ad purchase intent. Zhu et al. [40] argued that social media advertising message appeal possesses the advertising that influences consumers' brand purchase intent Hussain et al. [41] found that the entertainment, attractiveness, interactivity, and topicality, of social media ads can influence online brands' purchase intention and word-of-mouth propagation intention. In the context of green advertising, perceived information quality measures the strength of usefulness, attractiveness, and authenticity, of the information consumers receive from green ads, and consumers who receive more useful, engaging, and authentic information, from green ads will have a relatively lower decision risk to respond behaviorally based on their enhanced brand perceptions, which in turn tend to be more likely to respond in terms of purchase intentions and brand communication [20] to respond positively to green brands. Accordingly, this paper hypothesizes that:

Hypothesis H1: *The consumer's perceived information usefulness has a positive effect on green responses (1a green purchase intention, 1b green sharing intention).*

Hypothesis H2: *The consumer's perceived information attractiveness has a positive effect on green responses (1a green purchase intention, 1b green sharing intention).*

Hypothesis H3: *The consumer's perceived information truthfulness has a positive effect on green responses (1a green purchase intention, 1b green sharing intention).*

3.4. Information Quality Perception on Green Trust

According to communication persuasion theory, changes in individual consumer attitudes are influenced by external stimuli, such as persuasive messages. The quality of the persuasive message reflects the strength of the message's persuasive power and can affect the internal attitudes of consumers. Green advertising aims to provide consumers with information about the environmental utility of an organization's services or products [42]. Green trust, on the other hand, primarily measures the performance of a product on the environment and a company's commitment to environmental sustainability [35]. High-quality green advertising messages are more effective in conveying product and brand green values, and the higher quality of green advertising messages perceived by consumers can inspire brand pride, while enhancing consumer brand perceptions and reducing consumer vulnerability, which in turn generates personal beliefs of brand green trust. Numerous studies have confirmed a significant relationship between perceived green advertising message quality and consumer green trust. For example, Davis [43] argues that environmental claims in green advertising need to present as useful and objective and specific information as possible to prevent being perceived as untrustworthy. Ganz and Grimes [44] found that non-truthful information such as false and vague claims in green advertising can reinforce consumers' "drifting green" perceptions and reduce consumers' trust, thus creating negative attitudes towards green advertising and brands. Green trust both reflects consumers' positive attitudes toward brands and is central to maintaining close relationships between consumers and companies, and the perceived quality of high-quality green advertising information can reinforce consumers' green trust. Accordingly, this study hypothesizes that:

Hypothesis H4: *The consumer's perceived information usefulness has a positive effect on green trust (4a green competence trust, 4b green value trust).*

Hypothesis H5: *The consumer's perceived information attractiveness has a positive effect on green trust (4a green competence trust, 4b green value trust).*

Hypothesis H6: *The consumer's perceived information truthfulness has a positive effect on green trust (4a green competence trust, 4b green value trust).*

3.5. Green Trust on Green Response

Trust is an important indicator of brand reputation, reflecting the degree to which consumers trust the integrity and professionalism of a brand. For consumers, trust reflects the extent to which they perceive a company's integrity and reliability in the face of uncertainty. Green trust is the degree to which consumers trust a company to fulfill its responsibility for environmental protection, and it is also the psychological expectation formed by consumers based on the company's green competence, reliability, and goodwill [35]. Arnott et al. [45] found that consumer brand trust positively contributes to their brand commitment and brand recommendation. Becerra [19] argued that brand trust can significantly influence consumers' willingness to buy and positive brand recommendation for a brand. In the field of green marketing, green trust and consumer green response are usually measured by a single dimension, among which green purchase intention as a measure of consumer green response is mostly studied, Chen [35], Abdillah [1], and Ahmad et al. [46], argue that green trust is a driving factor of consumer green purchase intention and has a significant positive influence effect. In a green advertising context, when consumers develop trust in

the green capabilities and green values of a brand promoted by a green advertisement, they will stimulate emotional attachment and psychological identification with that green brand, and then become more willing to purchase and spread the green brand. Accordingly, this paper hypothesizes that:

Hypothesis H7: *The consumer's green competence trust has a positive effect on green responses (7a green purchase intention, 7b green sharing intention).*

Hypothesis H8: *The consumer's green value trust has a positive effect on green responses (7a green purchase intention, 7b green sharing intention).*

3.6. The Mediating Role of Green Trust

Consumers are stimulated by external information to trigger certain internal psychological state changes, which in turn produce corresponding behavioral responses [47]. Consumers' perception of brand quality affects their willingness to purchase environmentally friendly products [48], and green advertising, as an important vehicle for brand communication, has information quality that affects consumers' green purchase intentions through the mediation of green trust [49]. For example, Darley and Smith [50] found that consumers are less skeptical of objectively true advertising statements and generate stronger brand beliefs and purchase intentions than subjectively ambiguous green advertising statements. Brand communication is a one-dimensional structural construct; brand trust is an important predictor of consumer online brand communication behavior [51]. In the context of this study, when consumers perceive information quality characteristics such as usefulness, authenticity, and attractiveness of green advertising messages, brand identification and brand perceptions are reinforced, intrinsic emotions of trust in the brand's green capabilities and green values conveyed by the environmental message are further stimulated by the extrinsic stimulus, and consumers are more likely to generate purchase of the green brand based on their high regard for the brand and extrinsic behavioral responses to brand communication. Accordingly, this paper hypothesizes that:

Hypothesis H9: *The relationship between the perceived quality of green advertising information (9a information usefulness, 9b information attractiveness, and 9c information truthfulness) and green purchase intention is mediated by the consumer's green competence trust.*

Hypothesis H10: *The relationship between the perceived quality of green advertising information (9a information usefulness, 9b information attractiveness, and 9c information truthfulness) and green purchase intention is mediated by the consumer's green value trust.*

Hypothesis H11: *The relationship between the perceived quality of green advertising information (9a information usefulness, 9b information attractiveness, and 9c information truthfulness) and green purchase intention is mediated by the consumer's green competence trust.*

Hypothesis H12: *The relationship between the perceived quality of green advertising information (9a information usefulness, 9b information attractiveness, and 9c information truthfulness) and green sharing intention is mediated by the consumer's green value trust.*

Green values trust mediates between perceived green advertising information quality (12a information usefulness, 12b information attractiveness, 12c information truthfulness) and consumers green sharing intention.

Through the above analysis, this study constructs a theoretical model of the impact of perceived quality of green advertising messages on green responses based on the theory of communication persuasion, as shown in Figure 1.

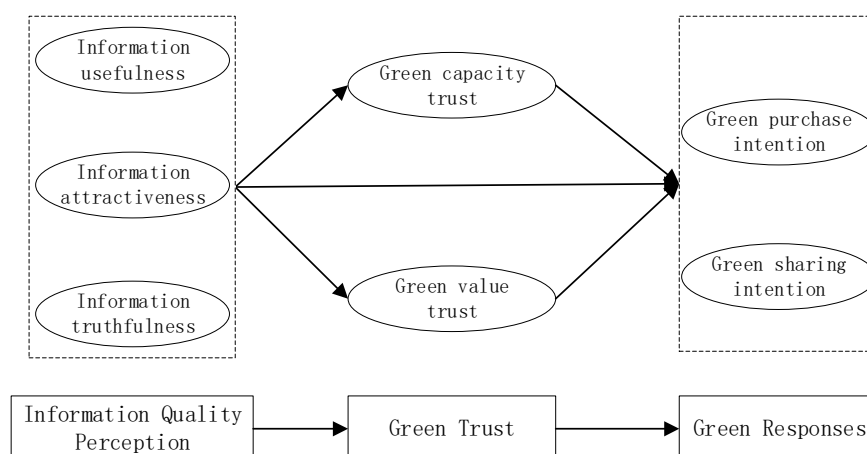


Figure 1. Research model.

4. Study 1

Study 1 constructs an econometric model by crawling the online review data of green ads through Python, and uses unstructured data to verify the effect of perceived green ad information quality (information usefulness, information attractiveness, and information truthfulness) on the direct effect of consumers' green purchase intention and green sharing intention (to test hypotheses H1, H2, and H3) and to improve the robustness and external validity of the study results.

4.1. Data Sources and Data Collection

This study takes green smart home advertisements as the object of capture, mainly based on the following considerations. First, the main market consumers, especially the younger generation of consumers, prefer environmentally friendly and energy-saving smart home products, and advertisements with this theme are more and more common. Secondly, clothing, food, housing, transportation, and travel, are the key areas of green consumption, and green smart home products are important products in the field of a green household, which can achieve the effect of environmental protection and energy saving, but also enable consumers to experience a wise and comfortable home environment, and an energy-saving and environmentally friendly smart home is the future trend. Third, the smart home products themselves, through intelligent sensors, monitoring technology, and artificial intelligence technology such as cloud database to intelligently regulate or monitor resources such as water, electricity and gas at home, to achieve the green and efficient use of indoor energy and low carbon energy saving and environmental protection. Therefore, the selection of green smart home advertising research subjects is in line with the younger generation of consumers' perceptions of smart home products' environmental preferences on the one hand, and the research results can also provide more reference value for relevant green smart home brands' practical ideas on the other.

The data source was selected as the base data source for the green advertisement comment content promoted by the official microblog of green smart home brands or green smart home bloggers on the Sina Weibo platform. For crawling ad content, it includes website address, blog ID, commenter ID, comment content, date of posting, number of comments, number of retweets, number of likes, microblog content, microblog account name, number of blogger followers, number of bloggers following, number of bloggers posting, and web distinguishing code. The final total crawling of 209 advertising blog posts, due to the existence of the mechanism of filtering bad comments in Sina Weibo, the actual number of crawled comments is less than the total number of comments displayed; the final crawling of 10,377 green smart home advertising comments, excluding irrelevant comments and invalid comments, finally produces 9239 effective comments data.

Among them, for smart single product ads, there were 1014 effective comments on gas sensor ads (accounting for 86.74%), 1935 effective comments on smart switch ads (accounting for 84.24%), 500 effective comments on smart socket ads (accounting for 87.11%), 149 effective comments on smart door lock ads (accounting for 100%), 120 effective comments on flood guard ads (accounting for 98.36%), 27 effective comments on air purifier ads (accounting for 45.76%), and 27 effective comments on air conditioner companion ads (accounting for 45.76%). Additionally, there were 101 effective comments on air purifier ads (86.74%), and 27 effective comments on air conditioner companion ads (45.76%). For smart home appliances, there were 794 (90.95%) effective comments on energy-saving refrigerators, 1379 (84.24%) effective comments on energy-saving air conditioners, 269 (85.40%) effective comments on water-saving washing machines, 541 (93.28%) effective comments on energy-saving water heaters, 396 (98.26%) effective comments on water-saving smart toilets, and 429 (86.67%) effective comments on energy-saving wall-hanging stove advertisements. In terms of whole-house intelligence, there were 512 effective comments on intelligent light control ads (accounting for 93.26%), 124 effective comments on intelligent dimming ads (accounting for 93.23%), 309 effective comments on intelligent IOT ads (accounting for 84.43%), 273 effective comments on whole-house intelligence ads (accounting for 92.54%), and 367 effective comments on intelligent home ads (accounting for 96.33%).

4.2. Variable Measurement and Model Building

Aspects of core variable measurement. For the independent variables, after splitting words and comparing marketing dictionaries, the words corresponding to the advertising review text data were divided into different dimensions of advertising information quality perception and we counted the total word frequency in each sub-dimension. We then further calculated the percentage of the word frequency contained in each dimension of green smart home advertising information quality perception in the total word frequency, and used them to measure the independent variables green advertising information usefulness (YYX), information attractiveness (XYX), and information truthfulness (ZSX) dimensions. For the dependent variables, green purchase intention (GMY) and green sharing intention (FX) are selected to measure the likes (DZSL) and retweets (ZFSL) of green smart home ads, respectively, mainly because the likes of green smart home ads on the Sina Weibo platform affect consumer users' perceptions of the product and thus their purchase decisions. Meanwhile, the amount of retweets directly implies consumers' sharing and spreading behavior towards this green smart home brand. For the control variables, this study selects five control variables: the number of author's followers (FSSL), the number of author's concerns (GZSL), the number of author's blogs (FBSL), whether or not it is a like-retweet sweepstakes type of microblog (CJWB), and the source of microblog content acquisition (WBL). The reason for this is that all five variables have a practical effect on the ad comment data, as well as the number of likes and retweets.

On this basis, this study constructs the econometric models of information usefulness, information attractiveness, information truthfulness, number of ad likes, number of ad retweets, and specific control variables of green smart home advertisements, and regression analysis using least squares method, which can obtain more robust research results. The following two models were constructed specifically.

Equation (1): Modeling the impact of the number of green smart home ad likes

$$DZSL = \alpha_1 + \beta_{11}YYX + \beta_{12}XYX + \beta_{13}ZSX + \delta_{14}FSSL + \delta_{15}GZSL + \delta_{16}FBSL + \delta_{17}CJWB + \delta_{18}WBL + \eta_1 \quad (1)$$

Equation (2): Modeling the number of green smart home ad retweets

$$ZFSL = \alpha_2 + \beta_{21}YYX + \beta_{22}XYX + \beta_{23}ZSX + \delta_{24}FSSL + \delta_{25}GZSL + \delta_{26}FBSL + \delta_{27}CJWB + \delta_{28}WBL + \eta_2 \quad (2)$$

Of these, the α_1 and α_2 are the intercept terms. β_{11} , β_{12} , and β_{13} are the coefficients of the linear effects of advertising message usefulness, message attractiveness and message truthfulness on the number of likes in Equation (1). β_{21} , β_{22} , and β_{23} are the coefficients of the linear effects of the usefulness of the advertising message, the attractiveness of the

message and the truthfulness of the message on the number of retweets in Equation (2) δ_{14} , δ_{15} , and δ_{16} , δ_{17} and δ_{18} are the coefficients of control variables controlling for the linear effects of the number of author followers, number of author followers, number of author tweets, retweeted sweepstakes tweets and tweet source variables on the number of ad likes in Equation(1). δ_{24} , δ_{25} , δ_{26} , δ_{27} and δ_{28} are control variable coefficients controlling for the linear effects of the number of author followers, the number of author followers, the number of author tweets, the number of retweeted sweepstakes tweets and the tweet source variable on the number of ad retweets in model two. η_1 and η_2 are the residual terms in model one and model two, respectively.

4.3. Results and Discussion

In this study, the econometric model data were analyzed using the Stata 16.0 software, and to ensure comparability among the variables, the explanatory variables, the explained variables, and the control variables, were standardized before the formal data analysis, and the data after standardization were put into Equations (1) and (2) for regression analysis, and the model regression results are shown in Table 1 below.

Table 1. Econometric regression results.

Variables	Green Purchase Intention		Green Sharing Intention	
	DZSL	DZSL	ZFSL	ZFSL
FSSL	0.0029 *** (8.0463)	0.0027 *** (8.0707)	0.0031 *** (7.6541)	0.0030 *** (7.7676)
GZSL	−0.0005 *** (−3.7617)	−0.0005 *** (−4.3725)	−0.0004 *** (−3.7335)	−0.0005 *** (−4.0881)
FBSL	−0.0000 ** (−2.3975)	−0.0000 ** (−2.4247)	−0.0000 * (−1.8274)	−0.0000 * (−1.7527)
CJWB	0.3798 *** (3.0507)	0.4322 *** (3.7276)	0.1431 (1.1333)	0.1677 (1.3534)
WBLY	−0.2964 *** (−2.7638)	−0.2712 *** (−2.7095)	0.0527 (0.4877)	0.0633 (0.5913)
YYX		0.2057 *** (3.9603)		0.1363 ** (2.5251)
XYX		0.2835 *** (5.3170)		0.1182 ** (2.4201)
ZSX		0.0223 (0.4369)		0.0567 (1.1640)
Constant	−0.1316 (−1.0055)	−0.0655 (−0.5695)	−0.3171 ** (−2.4930)	−0.3089 ** (−2.5119)
R-squared	0.4104	0.4848	0.3946	0.4046

Note: * represents the significance level $p < 0.05$, ** represents the significance level $p < 0.01$, and *** represents the significance level $p < 0.001$.

From the regression results, it can be found that in Equations (1), control variables such as FSSL, GZSL, FBSL, CJWB, and WBLX, have significant effects on the number of green advertising likes ($p < 0.05$), R^2 is 0.4104. After adding the arguments YYX, XYX, and ZSX, R^2 it increases from 0.4104 to 0.4848, indicating that the degree of fitting of the model becomes better. From the perspective of the degree of influence of independent variables, the biggest influence on the degree of green advertising likes is information attractiveness ($\beta_{12} = 0.2835$, $p < 0.01$), followed by information usefulness ($\beta_{11} = 0.2057$, $p < 0.01$), and finally information authenticity ($\beta_{13} = 0.0223$), but the influence of information authenticity did not pass the significance test ($t = 0.4369$).

In Equations (2), control variables such as FSSL, GZSL, and FBSL, have a significant impact on the number of green ads forwarded ($p < 0.05$), but CJWB and WBLY control variables have no significant impact ($p > 0.05$) R^2 Is 0.3946. After adding the independent variables YYX, XYX, and ZSX, R^2 it increased from 0.3946 to 0.4046, indicating that the fitting degree of the model became better. From the perspective of independent variable influence

degree, similar to Equations (1), information attractiveness and information usefulness have a significant impact on the number of green ads forwarded ($p < 0.05$), but information authenticity has no significant impact ($p > 0.1$). Among them, information usefulness has a higher impact ($\beta_{21} = 0.1363$, $p < 0.05$), followed by message attractiveness ($\beta_{22} = 0.1182$, $p < 0.05$), and finally information authenticity ($\beta_{23} = 0.0567$, $p > 0.1$). In addition, compared with green sharing intention, consumers' perception of green advertising information quality has a higher degree of fitting to the model of green purchase willingness ($R^2 = 0.4848 > R^2 = 0.4046$).

Study 1 showed that only information usefulness and information attractiveness among the consumer's perceived information quality segmentation dimensions of green smart home advertisements had a significant effect on the consumer's green purchase intention and green sharing intention, i.e., testing hypotheses H1 and H2; however, the positive effect of the consumer's perceived information authenticity on green purchase intention and green sharing intention did not pass the significance test. This finding differs from the findings of Shoenberger et al. [38], where previous studies in the field of green consumption found that brand authenticity can stimulate consumer users' perceived authenticity judgments, which in turn promote their green purchasing behavior. The reason may be that Chinese consumers' green purchase intentions are driven by green smart home brand satisfaction and sharing intentions are motivated by altruism; the authenticity of advertising information is the most basic requirement for smart home brand promotion information, and Chinese consumers do not perceive the brand's altruistic tendencies, so the perceived authenticity of information does not directly motivate Chinese consumers' green purchase and sharing intentions towards this smart home brand. Therefore, the perception of message authenticity does not directly motivate Chinese consumers to make green purchases and share the smart home brand.

5. Study 2

Study 2 used a scenario-based experimental approach to construct structural equation models to verify the direct path results of the effect of green advertising message quality perceptions (message usefulness, message attractiveness, and message truthfulness) on the consumer's green purchase intentions using structured data (validating hypotheses H1–H8) and to verify the mediating role of green competence trust and green values trust between green advertising message quality perceptions and green responses (validate hypotheses H9–H12) to improve the internal validity of the findings.

5.1. Experimental Material Design

In this study, a fictitious green smart home brand "TODA" was used to create a 50-second green smart home advertisement video (containing text, pictures, animations, and voiceover), and the subjects watched the green smart home advertisement and answered the subsequent questionnaire items. The content of the ad starts with a description of the current state of home energy, calling the public's attention to home energy conservation ("Home air conditioners consume 3.47 watts of power in standby mode, invariably wasting electricity"), followed by the core part of the green smart home ad message, including the presentation of the company's concern for environmental issues and its efforts ("TODA pursues convenience and intelligence to save energy efficiently"), and includes presenting the energy-saving performance of the product itself ("TODA intelligently regulates indoor temperature and saves 23% of energy consumption per year on average").

5.2. Sample Source and Data Collection

The formal questionnaire research was conducted through the Credamo online research platform during November 2021. The questionnaire consisted of three parts: the first part required the subjects to watch a self-made green smart home advertisement; the second part required the subjects to fill in an academic scale of core variables based on the green smart home advertisement they watched; and the third part filled in the subjects'

basic information, including gender, age, education level, annual household income, and occupation. In order to reasonably select a valid sample, the questionnaire used a response quality control technique, which required the subjects to watch the advertisement at least twice, and added a discriminatory question and a reverse question to determine whether the subjects answered carefully. A cash return of five dollars was given to the valid sample that passed the response quality control technique.

A total of 850 questionnaires were distributed, and after eliminating the logical incompatibility and regularity of filling out the questionnaires, 715 valid questionnaires were obtained, with an efficiency rate of 84.1%. Among the valid samples, 49% were males and 51% were females. In terms of occupation, enterprises and institutions mainly accounted for 23.2% of the total number of employees in state-owned enterprises, 11.2% in institutions, and 50.5% in private enterprises; annual household income was mainly between CNY 100,000 and 500,000, with 45.9% accounting for 100,000 to 200,000, 28.1% for 200,000 to 300,000, and 13.1% for 300,000 to 500,000. The proportion is 13.1%. In general, the sample is relatively random and representative.

5.3. Variable Measurement and Reliability and Validity Testing

To ensure the reliability and validity of the questionnaire scale, this study used a more established scale and modified it appropriately in the context of the study in consultation with research scholars in the field. The information usefulness measure was drawn from Khwaja et al. [52] and included three question items ($\alpha = 0.718$); the information attractiveness measure was drawn from Lurie [53] and included five question items ($\alpha = 0.927$); the information truthfulness measure was referred to Zhang [54] and Negash [55] and included four question items ($\alpha = 0.804$); green values trust measure referenced from Ganesan [56] and Mcknight [32] studies, including four items ($\alpha = 0.737$); green competence trust measure draws from Mcknight [32] and Gefen et al. [57] studies, including three items ($\alpha = 0.778$); green purchase intention measure draws on Lee et al. [58] and Chang [59] and consists of four question items ($\alpha = 0.834$); the green willingness to share measure draws on the Harrison-Walker [60] study and consists of four question items ($\alpha = 0.841$). All seven variables were measured on a 7-point Likert scale, with 7 representing “completely agree” and 1 representing “completely disagree”. The specific measurement items are shown in Table 2 below.

Based on the results of the analysis, it is clear that the factor loadings of each question item are above 0.6, indicating good convergent validity of the observed question items for each construct, and the CR values of the combined reliability indicators are above 0.7, again validating the good reliability of the scale. In addition, the AVE values of all variables were greater than 0.5, except for the AVE values of the average variance extraction of information usefulness and green competence trust, which were close to the critical value of 0.5. Despite the low AVE values of information usefulness and green competence trust, this study concluded that the scale convergent validity passed the test when all other measures were good. The validation factor analysis yielded model fit coefficients: $\chi^2/df = 1.955 < 3$, CFI = 0.974 > 0.9, TLI = 0.969 > 0.9, RMSEM = 0.037 < 0.06, and other models were worse for each fit indicator compared to the original model (seven-factor model) and passed the chi-square test with a significance level of 0.001, indicating inter-variate The discriminant validity is good. In particular, the one-factor model fit was poor, with $\chi^2/df = 9.156 > 3$, CFI = 0.758 < 0.9, TFI = 0.736 < 0.9, and RMSEA = 0.108 > 0.06, so there was no serious problem of common method bias in the measurement process of this study.

Table 2. Variable measurement question items.

Scale Items	Load Factor
Information usefulness ($\alpha = 0.718$, CR = 0.741, AVE = 0.418)	
1. I think I can get a more effective message from this green ad than from a traditional ads	0.700
2. I think the green ad provides me with more valuable information than the traditional ads	0.645
3. I think the green ad provided me with more useful information than the traditional ads	0.695
Information attractiveness ($\alpha = 0.927$, CR = 0.927, AVE = 0.717)	
1. I think the green ad is more visually appealing compared to traditional ads	0.800
2. I think the format of the green ad is relatively new compared to traditional ads	0.823
3. I think the content of the green ad is more vivid and interesting compared with the traditional ads	0.872
4. I have a relatively strong interest in knowing about that green ad compared to traditional ads	0.832
5. I think the green ad is more attractive compared to traditional ads	0.912
Information truthfulness ($\alpha = 0.804$, CR = 0.805, AVE = 0.508)	
1. I believe the information described in the green ad is not off-base compared to traditional ads	0.645
2. I believe the information described in the green ad is true and objective compared to traditional ads	0.740
3. I think the information described in this green ad is factual compared to traditional ads	0.720
4. I believe the information described in this green ad is accurate and reliable compared to traditional ads	0.743
Green capacity trust ($\alpha = 0.778$, CR = 0.779, AVE = 0.540)	
1. I think the green brand offers better green products compared to other brands	0.754
2. I think the green brand is stronger in providing green products compared to other brands	0.746
3. I think the green brand will be able to provide green products that are better for the environment than other brands	0.703
Green values trust ($\alpha = 0.737$, CR = 0.748, AVE = 0.428)	
1. I think the green brand is more concerned about the interests of the earth's environment than other brands	0.624
2. I believe that this green brand values the interests of the Earth's environment more than its own short-term interests compared to other brands	0.699
3. I believe that the green brand will not damage the planet's environment for its own benefit compared to other brands	0.685
4. I think this green brand will try to help solve problems in the global environment compared to other brands	0.676
Green purchase intention ($\alpha = 0.834$, CR = 0.816, AVE = 0.526)	
1. I will consider buying this green brand when needed	0.757
2. When buying similar products, I will give priority to this green brand	0.770
3. I am more likely to buy that green brand product among similar products	0.820
4. My willingness to buy this green brand product is higher compared to similar products	0.852
Green sharing intention ($\alpha = 0.841$, CR = 0.849, AVE = 0.653)	
1. I will talk to others on online platforms about this green brand related information	0.744
2. I will say positive things about this green brand on online platforms	0.612
3. I will forward this green branding message on the online platform	0.830
4. I will share the product information of this green brand on the online platform	0.832

5.4. Results and Discussion

Structural Model Test Results. First, the structural equation model was constructed using the Amos 24.0 software to verify the model fit. The results of the model fitness index showed that: $\chi^2/df = 2.337$, which is less than the critical value of 3, TLI = 0.957 and CFI = 0.962, which are both greater than the critical value of 0.9, and RMSEA = 0.044, which is less than the critical value of 0.06, indicating that the theoretical model has a good fit with the research data.

Second, the path coefficients between the variables were verified. The results are presented in Table 3 below: information usefulness has a significant positive effect on green purchase intention and green sharing intention ($\beta = 0.234, p < 0.001$; $\beta = 0.122, p < 0.05$), hypothesis H1 holds; information attractiveness has a significant positive effect on green purchase intention and green sharing intention ($\beta = 0.190, p < 0.001$; $\beta = 0.145, p < 0.01$), hypothesis H2 holds; the positive effect of information truthfulness on green willingness to buy and green willingness to share is not significant ($\beta = 0.031, p > 0.05$; $\beta = 0.046, p > 0.05$), hypothesis H3 does not hold. The positive effect of information usefulness on both green competence trust and green values trust was significant ($\beta = 0.117, p > 0.05$), therefore hypothesis H8b holds and hypothesis H8a does not hold.

Table 3. Analysis of structural model results.

Hypothesis	Direct Path	Estimate	S.E.	C.R.	P	Conclusions
H1a	YYX \rightarrow GMY	0.234	0.050	4.736	***	establish
H1b	YYX \rightarrow FXYY	0.122	0.063	2.559	*	establish
H2a	XYX \rightarrow GMY	0.190	0.023	3.688	***	establish
H2b	XYX \rightarrow FXYY	0.145	0.027	2.794	**	establish
H3a	ZSX \rightarrow GMY	0.031	0.060	0.403	0.687	untenable
H3b	ZSX \rightarrow FSYY	0.046	0.084	0.573	0.567	untenable
H4a	YYX \rightarrow NLXR	0.117	0.071	2.264	*	establish
H4b	YYX \rightarrow JZGXR	0.165	0.070	2.988	**	establish
H5a	XYX \rightarrow NLXR	0.414	0.022	10.255	***	establish
H5b	XYX \rightarrow JZGXR	0.299	0.020	7.387	***	establish
H6a	ZSX \rightarrow NLXR	0.500	0.061	9.006	***	establish
H6b	ZSX \rightarrow JZGXR	0.566	0.060	9.546	***	establish
H7a	NLXR \rightarrow GMY	0.435	0.061	5.040	***	establish
H7b	NLXR \rightarrow FXYY	0.321	0.080	3.816	***	establish
H8a	JZGXR \rightarrow GMY	0.145	0.115	1.684	0.092	untenable
H8b	JZGXR \rightarrow FXYY	0.339	0.094	3.726	***	establish

Note: * represents the significance level $p < 0.05$, ** represents the significance level $p < 0.01$, and *** represents the significance level $p < 0.001$.

Mediation Model Test Results. The Bootstrap method was further used to test the mediating effect of green competence trust and green values. A sample size of 5000 was set, a bias-corrected non-parametric percentile method was chosen, and 95% confidence intervals were set to obtain confidence intervals for each specific mediating path as shown in Table 4 below. The results show that green competence trust mediates insignificantly between information usefulness and green willingness to buy and green willingness to share (LLCI = -0.007 , ULCI = 0.158 ; LLCI = -0.004 , ULCI = 0.111 ; contains 0). Green values trust mediated insignificantly between information usefulness and green purchase intentions (LLCI = -0.007 , ULCI = 0.089 , inclusive of 0). Green values trust mediated insignificantly between information attractiveness and green purchase intentions (LLCI = -0.021 , ULCI = 0.124 , inclusive of 0). Green values trust mediated significantly between information truthfulness and green willingness to buy (LLCI = 0.046 , ULCI = 0.227 , excluding 0), with a mediating effect value of 0.088 . Green competence trust mediated significantly between information attractiveness and green willingness to buy (LLCI = 0.079 , ULCI = 0.329 , excluding 0), with a mediating effect value of 0.120 . Green competence trust mediated significantly between information truthfulness and green willingness to buy (LLCI = 0.108 , ULCI = 0.417 , excluding 0), with a mediating effect value of 0.063 .

Green competence trust mediated significantly between information attractiveness and green willingness to share (LLCI = 0.049, ULCI = 0.244, excluding 0), with a mediating effect value of 0.061. Green competence trust mediated significantly between information truthfulness and green willingness to share (LLCI = 0.058, ULCI = 0.305, excluding 0), with a mediating effect value of 0.073. Green values trust mediated significantly between information usefulness, information attractiveness, information truthfulness, and green willingness to share (LLCI = 0.009, ULCI = 0.142; LLCI = 0.039, ULCI = 0.187; LLCI = 0.066, ULCI = 0.357, excluding 0), with mediating effect values of 0.056, 0.101, and 0.092, respectively.

Table 4. Analysis of intermediary effect results.

Hypothesis	Intermediary Path	Estimate	S.E.	Bootstrap 95% CI		Master Agent Percentage of Effect	Conclusions
				Lower	Upper		
H9a	YYX → NLXR → GMY	0.030	0.041	−0.007	0.158	3.77%	untenable
H9b	XYX → NLXR → GMY	0.120	0.064	0.079	0.329	15.08%	establish
H9c	ZSX → NLXR → GMY	0.063	0.078	0.108	0.417	7.91%	establish
H10a	YYX → JZGXR → GMY	0.027	0.024	−0.007	0.089	3.39%	untenable
H10b	XYX → JZGXR → GMY	0.047	0.036	−0.021	0.124	5.90%	untenable
H10c	ZSX → JZGXR → GMY	0.088	0.069	0.046	0.227	11.06%	establish
H11a	YYX → NLXR → FXY	0.038	0.028	−0.004	0.111	4.77%	untenable
H11b	XYX → NLXR → FXY	0.061	0.048	0.049	0.244	7.66%	establish
H11c	ZSX → NLXR → FXY	0.073	0.063	0.058	0.305	9.17%	establish
H12a	YXY → JZGXR → FXY	0.056	0.032	0.009	0.142	7.04%	establish
H12b	XYX → JZGXR → FXY	0.101	0.038	0.039	0.187	12.69%	establish
H12c	ZSX → JZGXR → FXY	0.092	0.075	0.066	0.357	11.56%	establish
Aggregate mediating effect				0.796		100%	

From the results of the structural model test, it was found that information usefulness and attractiveness have a significant positive effect on green purchase intention and green sharing intention, and hypotheses H1 and H2 hold. The positive effect of information truthfulness on green purchase intention and green sharing intention is not significant and hypothesis H3 does not hold. The positive effects of information usefulness, attractiveness, and truthfulness, on both green competence trust and green value trust are significant, and hypotheses H4, H5, and H6, hold. Green competence trust has a significant positive effect on green purchase intention and green sharing 18 intention, hypothesis H7 holds. Green values trust positively affects green brand sharing intention significantly, while it does not affect green brand buying intention significantly, hypothesis H8b holds and hypothesis H8a does not hold. From the results of the mediation model test, it is found that green competence trust is not significant in mediating between information usefulness and green willingness to buy and green willingness to share, hypotheses H9a and H11a are not valid. Green values trust is not significant in mediating between information usefulness, attractiveness, and green willingness to buy, hypothesis H10a and H10b does not hold. Green values trust mediates significantly between information truthfulness and green willingness to buy, hypothesis H10c holds. Green competence trust mediates significantly between information attractiveness, truthfulness, and green purchase intention, and hypotheses H9b and H9c holds. Green competence trust mediates significantly between information attractiveness, truthfulness, and green willingness to share, and hypotheses H11b and H11c hold. Green value trust mediates significantly between information usefulness, information attractiveness, information truthfulness, and green willingness to share, and hypotheses H12a, H12b, and H12c hold.

6. Conclusions and Implications

6.1. General Conclusions

This study takes the perspective of consumer information quality perception, takes green smart home advertising as the research object, combines communication persuasion theory to explore the mechanism of green advertising information quality perception on consumer green response, and conducts an empirical test. It further enriches the research in the field of green advertising, helps green smart home brands to grasp the actual demand of consumers for green advertising and to develop targeted green advertising marketing strategies in a timely manner. This study will help green smart home brands to grasp the consumer's actual demand for green advertising and formulate targeted green advertising marketing strategies, and achieve the win-win situation of brand and ecological benefits. Using green advertising information quality perception (information usefulness, information attractiveness, and information truthfulness) as independent variables, green competence trust and green value trust as mediating variables, and green purchase intention and green sharing intention as dependent variables, we use unstructured data and structured data to construct econometric regression models and structural equation models, to dissect the influence of green advertising information quality perception on the consumer's green responses, and arrive at the following specific findings.

While the perceived usefulness and attractiveness of green advertising messages can directly drive the consumer's willingness to buy green and share green, the direct effect of the perceived message's authenticity on consumers' green responses is not significant. As Petty et al. [61] emphasize, "the higher the strength of the argument, the more persuasive the advertisement, regardless of individual involvement". Tucker et al. [62] also argue that strong green advertisements tend to present specific characteristics of the advertised product and firm's services, particularly the utility and presentation of the ad. However, the direct role of message authenticity is inconsistent with established research findings [63], and the reason for this is that green purchase intentions are likely to be driven by brand satisfaction and sharing intentions are motivated by altruism; message authenticity is the most basic requirement of a brand's promotional message, and consumers do not perceive the brand's altruistic tendencies, and therefore do not directly motivate green purchase. Additionally, the consumer does not perceive the brand's altruistic tendencies and therefore does not directly motivate the consumer's green purchasing and sharing intentions.

Green advertising message attractiveness and the perceived message authenticity can influence consumers' green purchase intentions and green sharing intentions through green competence trust. This is similar to Darley and Smith [50]: "Authenticity claims in green advertising can reduce consumer distrust and thus increase green purchase intentions", and Hussain et al. [41]: "Attractiveness of advertising messages can help increase consumers' word-of-mouth communication of online brands". In the green advertising context, the external stimuli of message attractiveness and message truthfulness can stimulate consumers to trust the brand's environmental competence, which in turn generates behavioral responses of green purchase intention and green sharing intention. However, the mediating effect of green competence trust between perceived information usefulness and green purchase intention and green sharing intention was not significant. The reason for this is that consumers' perceptions of green advertising utility-level information are mainly focused on the actual usefulness to individuals, and their altruistic perceptions of the brand's environmental competence are weak, resulting in insufficient behavioral tendencies of their green purchase intentions and green sharing intentions.

Green ad information usefulness and information attractiveness perceptions can influence consumers' green sharing intentions through green value trust, while information truthfulness perceptions drive consumers' green purchase intentions through green value trust. When consumers perceive green ads to be more argumentatively strong at the utility level and expression level, they are more likely to inspire green value trust, which in turn generates green sharing intentions, while when consumers perceive green ads to be more truthful at the content level, the stimulation of green value trust can drive green purchase

intentions. This is generally consistent with the findings of existing studies in different contexts, for example, Kim et al. [64] concluded that information authenticity and information attractiveness in social media can inspire consumer trust and thus influence their product attitudes and purchase intentions; Khwaja et al. [52] concluded that information usefulness, information quality, and argument quality, can inspire consumers' trust propensity and thus generate purchase intentions through information adoption intention to purchase through information adoption. However, the mediating effect of green value trust between information truthfulness and consumers' green sharing intention, and between information usefulness, information attractiveness, and green purchase intention, was not significant. This is not consistent with the findings of Xu et al. [65], probably because the different dimensions of consumers' perceptions of green advertising information quality and green trust perceptions are not coordinated, resulting in the behavioral responses do not match with the antecedents.

6.2. Theoretical Implications

According to communication persuasion theory, individual attitude change is mainly caused by persuasive subject, persuasive message, persuasive channel, and persuasive object. Based on this theory, this study extends the general "attitude" research to the "attitude response" research in the field of green marketing, which is a development of the communication persuasion theory. This is a development of persuasion theory. In addition, unlike communication persuasion theory, this study focuses on the core factor of attitude change, which is persuasive message, and constructs a theoretical model of the effect of perceived quality of green advertising messages on consumers' green response from the perspective of message quality.

Perceived information quality is a trigger or driver of behavioral response. Perceived usefulness, attractiveness, and authenticity of information, are the basis for consumers' willingness to buy or share, and they contribute to behavioral willingness by directly driving or indirectly influencing individual trust preferences. When consumers do not perceive the usefulness, attractiveness, and authenticity of information, their willingness to purchase or share will not occur, but even if they perceive the usefulness, attractiveness, and authenticity of information, their willingness to purchase or share may not occur directly. However, the direct effect did not pass the significance test. Therefore, it can be said that perceived information quality is a necessary but not sufficient condition for individual behavioral responses.

The intrinsic mechanistic role played by different dimensions of green trust is not consistent. Most of the existing literature tends to conceptualize green trust as a single dimension, ignoring the role played by the sub-dimensions of green trust, and this study remedies this research gap to some extent. Specifically, this study argues that green value trust plays a greater role than green competence trust in the mechanism underlying the influence of information quality perception on consumers' green responses, which indicates that the structure of consumers' trust in green advertising messages has begun to change, with green value trust playing an increasingly important role and consumers attaching more importance to the brand values promoted by green advertising. This finding deserves the attention and attention of green brands.

6.3. Managerial Implications

The popularity of the Internet has contributed to the rapid development of green advertising, but regardless of the form and content of the ads, the basis for the development of green advertising is to promote the brand's environmental philosophy and increase its influence. This study shows that the ability of green advertising to provide consumers with high-quality information determines whether consumers will buy as well as share green brands, and thus enhance the influence of green brands. Specific insights are as follows.

Green brand owners should strive to enhance the usefulness of green advertising information at the information utility level. The perceived usefulness of green advertising

information can directly affect consumers' green trust, and green response; therefore, green brand owners should gain real-time insight into consumers' information needs for green advertising, identify information that is valuable to consumers, timely eliminate ineffective information in green advertising and green information that is irrelevant to consumers' actual needs. Advertisers should improve the efficiency of ad information delivery, enhance consumers' perception of the value of ad information, and thus improve the utility quality of green ad information.

Green brand owners should strive to improve the attractiveness of green advertising messages from the information expression level. The perceived attractiveness of green advertising messages can directly affect consumers' green trust and green response, therefore, green brand owners should strengthen the information quality management of green advertising, actively pay attention to and make use of the new features of Internet information communication, improve the pattern, logic, and mode of green advertising information communication, and use more interactive, light-hearted, humorous, and lifelike, information expressions to enhance the attractiveness of green advertising information.

Green brand owners should strive to improve the authenticity of green advertising information at the information content level. The perceived authenticity of green advertising information can indirectly influence consumers' green responses. Therefore, green brand owners should actively and strictly control the information quality of green advertising, strive to show true and authoritative, accurate, and reliable advertising information, and identify and eliminate false information and bad information in a timely manner, so that consumers can purchase and share the green brand in a true and effective green advertising information environment.

Green brand owners should encourage consumers to respond positively to the green brand by fostering their green trust. Green advertising message quality perceptions enhance consumers' green trust to purchase and share the green brand, therefore, for green brand owners, the goal of green advertising message quality management is not only to directly induce consumers to purchase and share the green brand, but also to reinforce the green advertising message quality so that consumers confirm that the green brand is credible and enhance their trust.

6.4. Limitation and Future Scope

This study constructs a theoretical model of the influence of green advertising information quality perception on consumers' green response from the perspective of information quality, and uses multivariate heterogeneous data to construct econometric models and structural equation models to analyze the formation mechanism of consumers' green response. First, in addition to the perceived quality of green advertising information, there may be other influencing factors on consumers' green response. Future research can start from the perspective of green brands' own attributes and analyze what factors, such as brand proposition and service, can better drive or predict the willingness to purchase and share green brands. Second, due to human and financial constraints, we only investigated the subjects' attitudes during the experiment in Study 2, and failed to examine the changes in the subjects' attitudes over a longer period of time. Future research can determine the stability of the subjects' attitudes toward green advertising messages by extending the research period. Finally, the perceived quality of green advertising information has relatively strong subjective characteristics, and future research can investigate its influence on green brand response through qualitative research methods, such as the interview method.

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