

Article

How Should Green Messages Be Framed: Single or Double?

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Abstract: Researchers and marketers have been showing more interest in the areas of green product attributes. They found that consumers usually associate low quality with green products. Little is known about how to design a green message and how to present product attributes in the advertisement. The objective of this study is to examine the different impacts of message content (single vs. double message) and message order (green message presented first vs. later) on green brand attitude in green advertisement, and its moderating effects by its central and peripheral attributes. Two 2×2 experimental between-subjects designs were utilized to test the hypotheses. The results of Study 1 indicate that after consumers watched the double-message advertisement, they formed a significantly more positive green brand attitude toward the product compared to watching a single-message advertisement. The product attributes demonstrated their moderating effects on the above result. The central attribute expanded the difference between the double message and single message, but the peripheral attribute diluted the double-message effect. Study 2 examined the order effect in the double-message advertisement, and we found that presenting the green message first instead of later was the most effective method to persuade consumers. However, this effect was only significant when the green attribute of the product is the central attribute. The peripheral attribute would decrease the order effect in the double-message format. Implications and recommendations for future research are provided at the end of this paper.

Keywords: double message; message order; green attribute

1. Introduction

Consumers around the globe have been paying more attention to eco-friendliness and environmental protection when they are choosing the products to buy. In response to this trend, numerous branded companies have either introduced new “green” products, added “green attributes” to their current products, or replaced conventional attributes with green attributes. This is one of the marketing strategies, and the companies are claiming to fulfill their social responsibilities in this way [1–3].

The term “green” refers to a promotion for environmental protection and a non-invasive lifestyle [4]. Green products are manufactured with recyclable, non-toxic, or decomposable raw materials. Fewer natural resources are used during the production, which causes less harm to the environment [5,6]. Green attributes that are added to current products refer to the attributes given to the products or objects whose components or parts are defined as green [7,8]. Many consumers verbally support green products, but the actual proportion of green products purchased remains relatively low, which leads to a so-called “green gap” [9]. Consumers may have the desire to use and purchase eco-friendly products; however, they may also be concerned about green products having inferior quality, and as a result the actual purchase does not happen because of this hesitation. Researchers

consider this gap as the “green negative effect” or sustainable liability [7,9,10]. This gap has aroused interest among researchers and marketers.

Many researchers have made efforts to explore the connections between green products and consumers [7,11–16]. What corporate environmental strategies could be used [17–19]? How effective is green advertising [20–24]? Matthes and Wonneberger [22] believed that advertisements should contain practical information to facilitate consumers’ rational judgment and alleviate their concerns about green products. Some scholars have called for more research focusing on the impact of green marketing communications on consumers’ attitude and purchase behavior [21,25–27]. However, these researchers have not addressed the issue of the green gap and the green negative effect. It is still unclear how to design green product attributes and how presenting products in green advertisements might affect consumers’ attitude or purchase behaviors (e.g., [9]).

Another issue is that in reviewing previous research focusing on green advertisements, it was found that most advertisements used a single green message as the main method (e.g., [28–30]). Consumers tend to disfavor the products and doubt the quality of the products. Can we strengthen the product quality if we add the product’s functional performance message in the green advertisement? Therefore, the first research question is, does the method of double messages (green plus performance) have a more significant effect than the method of single messages on consumers’ attitude toward the product?

When the method of double messages is used in green advertisements, how should product information be presented in a sequence that seems to make a significant difference, that is, which message (green or performance) should be put first in sequence? Hence, the second research question is, when the method of double messages is used in green advertisements, does the order of presenting product attributes have a significant effect on consumers’ attitude toward the product?

Green attributes of the product could be categorized into central and peripheral. Is there a significant interaction between the green attributes of the product and the method of the message used (single vs. double) in green advertising? This is the third research question.

Therefore, the objective of this study is to examine the different impacts of message content (single vs. double message) and message order (green message presented first vs. later) on green brand attitude in green advertisements, and its moderating effects by central and peripheral attributes, in order to bridge the research gaps in green advertising and to provide recommendations for green marketing practices.

2. Theoretical Background

2.1. Green Advertising Appeals

Green advertising, which is one of the approaches used by branded companies to promote their products, refers to an appeal that attempts to remove consumers’ concerns for polluting the environment and damaging human health [31]. Banerjee et al. [32] proposed that green advertising must meet at least one of the three following criteria: (1) explicitly or implicitly mentioning the relationship between the product or service and the environment, (2) emphasizing that this product or service promotes a green lifestyle, and (3) conveying an environmentally responsible corporate image. Iyer and Banerjee [4] analyzed 173 print advertisements and reported that green advertising should at least contain information about earth protection, personal health, or animal conservation. Previous studies have found that consumers’ concerns about green advertising appeals include greenwashing [33–36], deceptive or fraudulent statements [24,34], agendas [37], information practicality [22,38], eco-labels [3,39–42], and source reliability [39,43,44].

Some scholars have classified green advertising appeals. Carlson, Grove, and Kangun [33] classified green advertising appeals into five types: (1) product orientation, (2) process orientation, (3) image orientation, (4) environmental fact, and (5) combination. Others have classified green appeals with environmental attributes into product-oriented or non-product-oriented [45]. White and

Simpson [16] explored the most effective green appeals among injunctive, descriptive, and self-benefit. Fowler III and Close [37] analyzed advertising campaigns at macro, meso, and micro levels.

Some studies have focused on the framework of green advertising. Grimmer and Woolley [21] investigated the impact of advertisement types on consumers' purchase intention. They designed three distinct types of advertisements: (1) a typical product advertisement without promoting environmental issues, (2) a product advertisement promoting benefits at the individual level with environmentally friendly actions, and (3) a product advertisement advocating the environmental benefits associated with environmentally friendly actions. Tucker et al. [46] compared the use of three advertising appeals, namely strong green product appeal, weak green product appeal, and cause-related marketing appeal. Schuhwerk and Lefkoff-Hagius [47] compared two product appeals: environmental attributes and cost-saving attributes.

Some studies have focused on the content of green advertising appeals. One study compared environmental protection with personal health [13], whereas others have explored the different types of advertising language: injunctive, descriptive, and self-benefit [16]. In addition, Kronrod et al. [48] discussed the rationale behind the typical use of assertive language by environmental appeals. Recently, scholars have also explored environmental threat appeals [49], appeals that imply self-accountability [50], and non-product-related appeals [20,50,51]. Segev, Fernandes, and Hong [24] conducted a meta-analysis of the development of green advertising in the past 20 years, and they reported a high consumer acceptance of green advertising. Carlson, Grove, and Kangun [33] found that there was a decline in the number of consumers who considered green advertising appeals misleading or fraudulent. However, one study reported that false information tends to appear in product-oriented advertisement [24].

2.2. Green Attributes of the Product

The term "green" refers to a promotion for environmental protection and a non-invasive lifestyle [4]. Green products are manufactured with recyclable, non-toxic, or decomposable raw materials. Fewer natural resources are used during the production. Thus, the production causes less harm to the environment [5,6].

Green attributes refer to the attributes given to products or objects whose components or parts are defined as green. For example, companies could use bio-degradable materials for the packaging. A computer sound card could be manufactured with less pollution for the environment [7,8]. However, numerous studies have suggested that consumers have unfavorable opinions about green products because of their poor performance [7,11,38,42,52,53]. Consumers tend to assume that manufacturers did not strive to produce green products with quality [15]. Choosing a conventional, high-performance product instead of a green product would be a trade-off that consumers might make [54]. Therefore, in order to alleviate consumers' concerns about the poor performance of green products, numerous studies have suggested that marketing managers highlight the high performance of the green products on the label [7,10,52]. Studies have proven that the quality and the valence of a message framework affect performance [55–58].

2.3. Product Attributes

Product attributes could be divided into central and peripheral attributes. According to theories of attribute centrality, a central attribute refers to the indispensability of a specific attribute to an object. This attribute is a crucial feature of the entire product [10,38,59]. Hampton et al. [60] used Brazilian doves as an example and compared the features of "feathered" and "white." From the viewpoint of their respondents, feathered doves possessed greater centrality than white ones. Gershoff and Frels [12] found that respondents' perception of the attributes of a green product is related to the importance of the green components of the product. Therefore, the types of the product attributes would significantly influence how consumers form their initial evaluation of the green product.

2.4. Order Effect of Message Presentation

It was found that consumers' decisions were affected by the order in which messages were presented in the advertisement (e.g., [61–63]). Hogarth and Einhorn [61] conducted a literature review and proposed the concept of the order effect. The order effect is mediated between information processing approaches and task characteristics. The order effect could be categorized as the primacy effect and the recency effect. Asch [64] indicated that consumers would adopt different processing approaches according to the order of the messages presented in the advertisement.

In addition, the order effect is related to the memory impressions stored in the human brain. If people have a stronger impression of the first message, then during the decision-making process, their final selection preference would be significantly dominated by the first message. This tendency is called the primacy effect. Conversely, the recency effect indicates that the last message in the advertisement would usually make a stronger impression in the human brain. In such a case, consumers tend to make their final purchase decision based on what is mentioned at the end of the advertisement.

Most consumers believe that green products imply poor performance. Based on this logic, a message or an advertisement emphasizing both green attributes and high product performance could be considered contradictory. In other words, there is a double message in the advertisement. Hogarth and Einhorn [61] explored the relationship between the order of contradictory information and the policy makers' belief adjustment, and they proposed the belief-adjustment model. The authors pointed out that people integrated each received piece of information sequentially into their original concept and continuously adjusted their original beliefs. Tubbs, Gaeth, Levin, and Van Osdol [62] conducted a study using the belief-adjustment model and found that combining inconsistent messages leads to the recency effect, and inconsistent messages that are further away from subjective values are more likely to result in such an effect. Trotman and Wright [63] noted that respondents receiving negative evidence before positive evidence are more likely to be influenced by the recency effect than the primacy effect. Therefore, presenting positive evidence after negative evidence could produce greater positive persuasiveness.

3. Hypotheses Development

3.1. Single-Message versus a Double-Message Advertisement

Previous studies have shown that consumers would generally associate green products with poor quality and performance [7,11,38,42,53]. Thus, some studies have suggested that marketers emphasize the functional performance of products in order to reduce consumers' concerns (e.g., [28,36]). However, conventional green advertising appeals usually adopt the method of a single message, and the advertisement only focuses on the green attributes of the product. Thus, this study is designed to include both the appeals of product performance and the green attributes of the product so that a double-message advertisement could be examined.

Luchs, Naylor, Irwin, and Raghunathan [7] mentioned that in an advertisement, promoting a green product with ethical attributes and product performance satisfaction would lead to consumers' negative perception of the product. Matthes and Wonneberger [22] found that providing more practical information about the product could enable consumers to make a logical choice rather than an emotional choice when they purchase the product. Therefore, this study hypothesizes that the impact of a double-message advertisement on the green brand attitude is significantly stronger than that of a single-message advertisement. The following hypothesis is formulated accordingly:

Hypothesis 1 (H1). *A double-message advertisement will have significantly more influence than a single-message advertisement in terms of increasing consumers' green brand attitude.*

3.2. Role of Green Attributes

It was found that the centrality or the peripherality of a product's green attributes affects consumers' perception of the product [10,12]. Consumers typically evaluate the central attributes of a product to guide their purchase. If the central attribute of the product is related to green attributes, based on consumers' impression that green products have inferior quality, a single message with green attributes as its centrality attribute results in a more negative green brand attitude among consumers. If a double message is employed, the message with product functional performance compensates for or improves consumers' initial impression that green products have inferior quality, and such fluctuation in consumer perception widens the difference between double and single messages.

Conversely, when the green attributes of the product are peripheral, their negative effect on product quality would be relatively small. Moreover, because peripheral attributes are generally not the centrality values that consumers are concerned with when purchasing a branded product, the double message may result in limited changes in consumer perception. In other words, there would be no significant differences between a double-message advertisement and a single-message advertisement. Therefore, this study formulates the following hypotheses:

Hypothesis 2a (H2a). *If the green attributes of a product are considered central, the double-message advertisement will have significantly more influence than the single-message advertisement on consumers' green brand attitude.*

Hypothesis 2b (H2b). *If the green attributes of a product are considered peripheral, the double-message advertisement will not have significantly more influence than the single-message advertisement on consumers' green brand attitude.*

Taking the above hypotheses together, the first research framework is constructed, as shown in Figure 1.

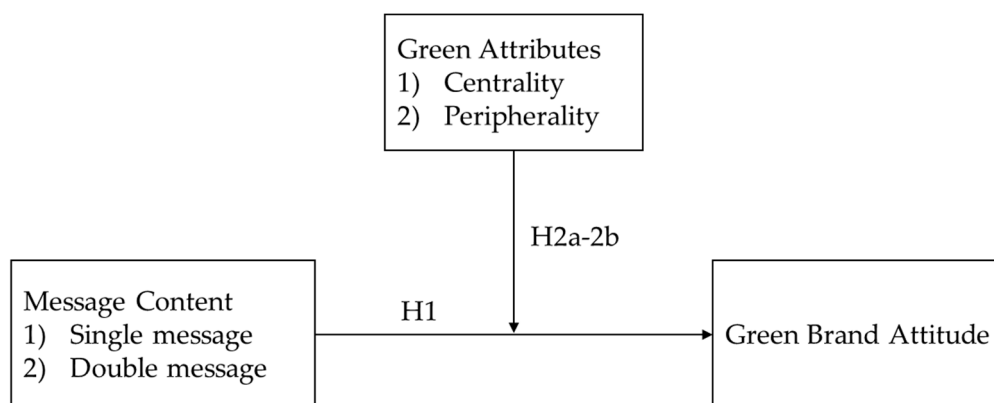


Figure 1. Research framework 1.

3.3. Impact of Message Order in a Double-Message Advertisement

In a double-message advertisement, product messages of green attributes and product performance are given to the consumers. Should marketers deliver the message of the green attributes of the product before the message of product performance, or vice versa? Hogarth and Einhorn [61] believed that the order theory, that is, the primacy effect and the recency effect, could advise marketers on what to do.

Comparing these two messages in the double-message format, consumers would perceive higher novelty for the green attributes message than the performance message. Therefore, in a double-message advertisement, the novelty of the green message would better catch consumers' attention if it was put first, according to the primacy effect. Placing the message of product performance in a later position tends to remove consumers' perception that green products would not usually have high performance.

On the contrary, it was found that if the message of product performance, which has lower novelty, is presented first, and the negative effects of the green attribute message, which has higher novelty, are not reduced, and such contradictory green messages would enable consumers to remember the message that is placed later [62,63], according to the recency effect. Thus, a decline in consumers' green brand attitude would happen. Therefore, the following hypothesis is formulated as follows:

Hypothesis 3 (H3). *In a double-message advertisement, presenting the message of green attributes of the product before the message of product performance will have a significantly greater impact on consumers' green brand attitude.*

According to H3, the novelty would be stronger if the message of green attributes is considered central, and subsequently the primacy effect of the green attribute would be strengthened further when it is presented first, and it reinforces the recency effect of the performance message when it is presented later. Both the primacy effect and recency effect generate an interactive effect on green brand attitude. Therefore, the order effect on consumers' green brand attitude would be expanded when the green message is presented first vs. later. However, when the green attributes of the product are considered peripheral, its novelty would not be as strong as the central attribute. The primacy effect of the green attribute would be reduced, no matter whether it is put first or later in the double-message format. On the other hand, the recency effect of a performance message would decrease combining with a lower novelty peripheral attribute. Therefore, the order effect on consumers' green brand attitude would have no significant difference when the green message is presented first vs. later. According to the above reasoning, we conclude that the types of green attribute would moderate the order effect of green message and performance message, and accordingly we formulate H4a and H4b.

Hypothesis 4a (H4a). *When the green attributes of the product are considered central, delivering the message of green attributes before the message of product performance will have significantly greater impact on consumers' green brand attitude.*

Hypothesis 4b (H4b). *When the green attributes of the product are considered peripheral, the order of delivering the message of green attributes and the message of product performance will not make a significant difference in consumers' green product attitude.*

Again, taking the above hypotheses together, we propose the following model (Figure 2).

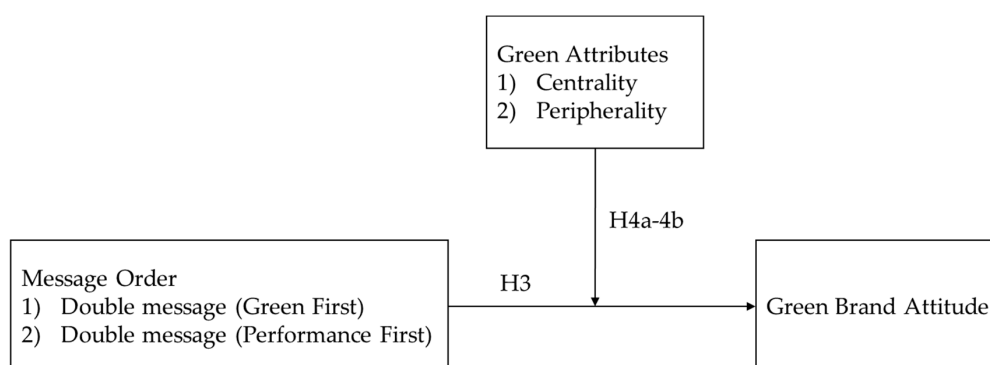


Figure 2. Research framework 2.

4. Study 1

The main purpose of Study 1 is to explore the different effects of message content (single vs. double message) on consumer's green brand attitude in green advertisement. Moreover, the causality relationship of the theoretical model is examined through an experimental approach.

4.1. Experiment Design and Stimuli Advertisement

Here in Study 1, a 2 (message content: single vs. double message) $\times$ 2 (green attributes: central vs. peripheral) between-subjects experimental design was employed. Reference [12] showed that green attributes could be manipulated by using product attributes. For the single message, a green product attribute is manipulated on the advertising, whereas the double message is formed by combining the product performance appeal with the original single green message. Regarding green attributes, according to existing literature [10], we can use the following illustration with shampoo as an example: A 100% natural formula is assigned as the product's central attribute, and a 100% degradable shampoo's bottle is assigned as the product's peripheral attribute.

In this study, shampoo was chosen as the target product because hair-care products are very accessible to consumers. Hair-care products have common items that include many green or non-green choices on the market. Therefore, the participants would not tend to question the authenticity of the fictitious shampoo. The key reason to use a fictitious shampoo brand called Denée as the experiment product brand is because we would like to prevent participants from forming associations with current brands of shampoo they are familiar with on the market.

Here, print advertisements were used as the experiment stimulus to elicit participants' evaluations (i.e., green brand attitude) of a fictitious green brand of shampoo brand, Denée. The graphic and performance messages of the experimental stimuli in our print advertisements are all the same, except for the treatment texts (i.e., message content and green attributes) (see Appendix A).

4.2. Dependent Variables

The dependent variable in this study is green brand attitude, which is adopted from Voss et al. [65]. A 7-point Likert scale was utilized to measure, anchored by 1 (strongly disagree) and 7 (strongly agree). Four statements given as follows were averaged as a score to evaluate participants' green brand attitude:

- (1) Denée shampoo is good.
- (2) Denée shampoo is pleasing.
- (3) Denée shampoo is attractive.
- (4) Denée shampoo is of good quality.

4.3. Subjects and Procedure

Undergraduate students were recruited as research subjects via convenient sampling from a university in central Taiwan. We sent the participants an invitation email regarding this research. By clicking on the link of the survey, which indicates that participants were willing to join, then participants were randomly assigned to one of the four conditions: central green attributes message only, peripheral green attributes message, central green attributes with performance message, and peripheral green attributes with performance message.

After viewing the advertisement, the participants were requested to answer some questions. First, to ensure that the participants would fill out the survey faithfully, we measured their attentiveness by asking a question: "Does Denée use a 100% natural formula to produce the shampoo?/Does Denée use a 100% degradable bottle to package the shampoo?" (Yes/No). If the answer is not correct, the sample would be deleted from the final analysis.

For checking the manipulation of green attributes, the participants would rate the importance of the experimental green attributes using a 5-point Likert scale from 1 (not important at all) to 5 (very important) by answering this question: "In your opinion, how important is the formula (bottle) of this shampoo?" After that, the participants would report their agreements to the following four statements of green brand attitude. Finally, the participants would input their gender and age, and then finish the survey.

4.4. Results

4.4.1. Manipulation Check

After the filtering check, we had 131 valid participants, where 23.7% of them were male and 76.3% of them were female; the age range was from 18 to 22 years old. The Cronbach's alpha for the dependent variable "green brand attitude" was 0.89 (higher than 0.7), showing higher internal consistency validity. Since the four statements were adapted from the literature [65], they had a good aggregation validity and content validity.

To check the effectiveness of the green attributes manipulation, we analyzed the data for the following manipulation check items: "In your opinion, how important is the formula (bottle) of this shampoo?" As we expected, the results showed that participants in the centrality/formula condition experienced higher attribute importance ($M_{\text{centrality: formula condition}} = 4.31$, $SD = 0.859$) than those in the peripherality/bottle condition ($M_{\text{peripherality: bottle condition}} = 3.42$, $SD = 0.992$, $F(1, 61) = 14.616$, $p = 0.000 < 0.05$).

4.4.2. Hypotheses Testing

The Effect of Message Content. To test our H1, that is, the effect of the different message content on participants' green brand attitude, a one-way ANOVA was conducted. The results show that the double-message advertisement had a significantly greater effect than the single-message advertisement on participants' green brand attitude ($M_{\text{double message}} = 5.09$, $M_{\text{single message}} = 4.65$, $F(1, 129) = 10.162$, $p = 0.002 < 0.05$). Therefore, H1 is supported.

The Effect by Green Attributes and Message Content. H2a stated that if the green attributes of a product are considered central, the double-message advertisement will have significantly more influence than the single-message advertisement on consumers' green brand attitude. H2b stated that if the green attributes of a product are considered peripheral, the double-message advertisement would not have significantly more influence than the single-message advertisement on consumers' green brand attitude. The result of the ANOVA reveals that the double-message advertisement had a significantly greater effect on participants' green brand attitude when the natural formula of Denee Shampoo was treated as a central attribute of the product ($M_{\text{central-double}} = 5.23$, $M_{\text{central-single}} = 4.53$, $F(1, 62) = 13.591$, $p = 0.000 < 0.05$; see Figure 3). However, when the degradable materials used to package the shampoo was treated as a peripheral attribute of the product, there was no significant difference in participants' green brand attitude, regardless of the types of advertisements ($M_{\text{peripheral-single}} = 4.79$, $M_{\text{peripheral-double}} = 4.97$, $F(1, 65) = 0.838$, $p = 0.36 > 0.05$; see also Figure 3). These results support H2a and H2b.

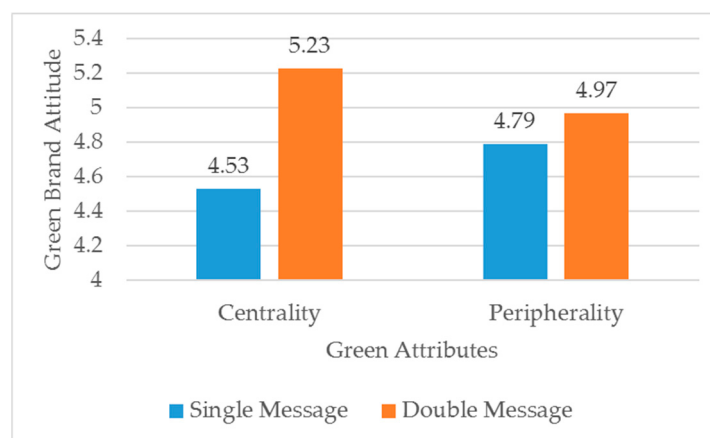


Figure 3. Green brand attitude by green attributes and message content (H2a and H2b).

5. Study 2

This study focuses on the order of product attributes in the double-message advertisement. What kind of information should be presented first to the consumers so that consumers' green brand attitude would be maximized? Should marketers present the green attributes of the product first, or the information of product performance? Would this order effect be moderated by different green attributes? H3 and H4 are examined in this study.

Here, a 2 (green attribute: central vs. peripheral) $\times$ 2 (message order: green message first vs. performance message first) between-subjects experimental design was employed. Two types of message order were manipulated; the remaining graphic, product stimuli, green attribute, green message, and performance message are the same as those in Study 1 (see Appendix B). Another sample was recruited using the same procedure as in Study 1, resulting in 155 valid participants, where 19.2% of them were male and 80.8% of them were female; the age range was from 18 to 22 years old.

Results

The Effect of Message Order. The one-way ANOVA test results reveal that presenting the green attributes of the product before the information of product performance could significantly increase participants' green brand attitude ($M_{\text{green first}} = 5.09$, $M_{\text{performance first}} = 4.75$, $F(1,153) = 6.035$, $p = 0.009 < 0.05$). Thus, H3 is supported.

The Effect by Green Attributes and Message Order. When the green attributes of the product are considered central, the results of the ANOVA show that participants would have significantly higher green brand attitude when the green attributes of the product are presented before the information of product performance ($M_{\text{central-green first}} = 5.24$, $M_{\text{central-performance first}} = 4.72$, $F(1,69) = 8.255$, $p = 0.005 < 0.05$; see Figure 4). On the contrary, when the green attributes of the product are considered peripheral, participants did not show a significant difference in their green brand attitude, regardless of the order of product attributes presented in the double-message advertisement ($M_{\text{peripheral-green first}} = 4.97$, $M_{\text{peripheral-performance first}} = 4.77$, $F(1,82) = 1.076$, $p = 0.303 > 0.05$; see also Figure 4). Thus, H4a and H4b are supported.

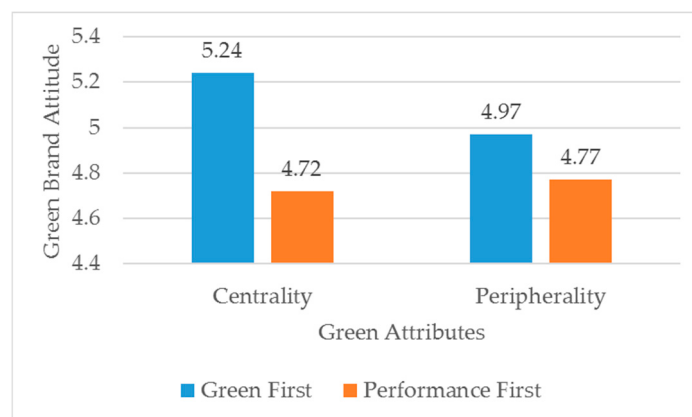


Figure 4. Green brand attitude by green attributes and message order (H4a and H4b).

6. Conclusions and Implications

6.1. Conclusions

After reviewing the previous research [7,22], the objective of this study was designed to examine the different impact of message content (single-message and the double-message) and message order (green message first vs. later) on green brand attitude in green advertisement and its moderating effects by central and peripheral attributes.

In Study 1, we found that after consumers watched the double-message advertisement, they formed significantly more positive green brand attitudes toward the product compared to watching the single-message advertisement. The product attributes demonstrated their moderating effects on the above result; in other words, the central attribute expanded the difference between a double message and a single message, but the peripheral attribute diluted the double-message effect.

Study 2 examined the order effect in the double-message advertisement, and we found that presenting the green message first instead of later was the most effective method to persuade consumers. However, this effect was only significant when the green attributes of the product is the central attribute. The peripheral attribute would decrease the order effect in the double-message format.

6.2. Theoretical Implications

Some researchers [10,15,38,54] have pointed out that the central product attribute, in general, might make consumers associate green products with poor product performance. This study provided empirical evidence that a single green message plus product performance information in a double-message advertisement could eliminate this negative association. In other words, when consumers hesitate to buy a green product, providing additional information about product performance could enable consumers to make a more rational evaluation of the product. Therefore, green advertising should not just focus on the green message, but it needs to combine it with a product performance message. We believe this double-message idea could provide some academic contribution via shortening the research gap in green advertising.

In applying the order theory from Hogarth and Einhorn [61], we found that the primacy effect and the recency effect happened in the double-message advertisement. According to the primacy effect, the novelty of the green message would better catch consumers' attention if it was put first, and the recency effect would happen for the performance message when it was put later. Furthermore, both the primacy effect and recency effect generate an interactive effect on green brand attitude for the central attribute but not for peripheral attribute. The different attributes provide their moderating effects on the primacy effect and recency effect of order theory. These findings strengthen the theoretical contribution for both the framing theory and consumer information processing.

6.3. Managerial Implications

It was found that consumers considered buying a green product to be a trade-off between eco-friendliness and product performance [38,54,66]. Going green might cause consumers to have negative emotions [15], and viewing a green advertisement might actually contradict consumers' preferences [7].

When the green attribute of the product is a peripheral attribute, the effects of a single and double-message advertisement did not vary significantly. This was because the green attribute was not important to consumers. However, when the green attribute of the product is important to consumers (i.e., a central attribute), it should be presented first in the double-message advertisement, and the peripheral attribute could be presented later.

We found that the effect of the double-message advertisement was significantly stronger when product attributes were central, but it did not have the same significant impact when product attributes were peripheral. Moreover, the result of our study reveals that presenting the green attributes of the product at the beginning of the advertisement may produce a higher attraction to the product from the participants. This result resonant with the primacy effect. Presenting the information of product performance later could decrease the side-effect of the primacy effect. Consumers responded with the highest green brand attitude after viewing this type of advertisement. The findings of this study had significant practical implications for marketing and advertising professionals. First, we offered evidence that the double-message advertisement was significantly more effective than the single-message advertisement. When the advertisement could provide both the green attributes and the performance attributes of the product, consumers could receive more practical and functional

information about the product. They would not need to solely depend on their emotions to make the purchase decision. They could also make logical choices. In addition, the information of the product performance might neutralize consumers' negative concerns regarding the poor quality of green products.

Second, these findings offer practical insights into how to tailor an advertisement to increase consumers' green brand attitude. Marketers need to persuade consumers that green products would have the same strong functions and high performance as the conventional products do. They need to make green attributes central, not peripheral, in their advertisements. Central green attributes of the product should be conveyed specifically. If the advertisement could show the functional attributes of the product, consumers might perceive the product positively and might consider "high performance" as one of the product attributes.

Third, the findings in this study indicate that presenting green product attributes before the information of product performance could have a significantly greater effect on consumers' green brand attitude when marketers use a double-message advertisement. Consumers tend to perceive the first message they receive as the most important attribute of the product. When they first see that the product has green attributes, they would recognize the product as an eco-friendly product. The rest of the information about the product would become supplementary.

6.4. Limitations and Future Research

This study demonstrated that consumers formed more positive green brand attitude when they saw a double-message advertisement compared with a single-message advertisement. The green attributes of the product in a double-message advertisement should be central, not peripheral, so that the green attributes of the product would impress the consumers. Our results may not be generalizable to many other product categories in which product performance is the major attribute of the product. Prior studies [7,10,53,67] have suggested that sustainable products may be associated with ethicality and gentleness. For those consumers who are seeking non-performance-related attributes, a single-message green advertisement will be persuasive enough. It is less aggressive than a double-message advertisement. Future research can investigate the boundary issues of a double-message advertisement.

Although this study did not specifically seek out female participants, a high proportion of the participants were women. Even though the gender ratio of the sample did not affect our analysis and findings, recent studies [68,69] have suggested the existence of a gender gap within sustainable consumption. We also discovered that more female participants than male participants would respond to green advertising. This finding affirms the existence of the gender gap in terms of environmental issues. However, most green products are not intended for only female consumers. Further research may explore how to attract male consumers through green advertisement.

Finally, existing research has shown that environmental certifications and eco-product labels are important variables of green research, but not the variables in this paper. There have been many works of literature that recently explored the effectiveness of environmental certifications and eco-product labels (e.g., [3,40,42,70–73]). Since we wanted to focus on clarifying the effect of the message content, green attributes, and message order, we did not specifically consider this approach. In the future, researchers may explore how to present eco-product labels and green appeal together.

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Appendix A



Figure A1. Experiment advertisements in Study 1.

Appendix B



With central attributes, green message presented first



With central attributes, performance message presented first



With peripheral attributes, green message presented first



With peripheral attributes, performance message presented first

Figure A2. Experiment advertisements in Study 2.

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