

Weichieh Su* Li-Keng Cheng**

Does Green Product Information Always Increase Purchase Intention? A Moderated Mediation Model of Amorality and Green Awareness

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Abstract

Purpose – In most copywriting, green information for the product is not presented alone, but mixed with general functional description. This study aims to examine whether consumers' purchasing behavior will be affected by the green information when green information is mixed with general information.

Design/methodology/approach – Three independent experiments are conducted to test our hypotheses.

Findings – This study concludes that consumers' green awareness mediates the impact of green product information on purchase intention; whereas consumers' amorality moderates their awareness of green information. Furthermore, consumers' amorality moderates the mediation effect between green products and purchase intention.

Research limitations – All the products used in these experiments are functional products. Participants may have different feelings towards experience-based products because of their green features.

Practical implications – Vendors shall notice how advertisements are presented to reinforce green information for consumers to perceive though, they shall also be aware that some amoral consumers may not correctly understand the green product information.

Value – This study discovers that green product information does not necessarily increase purchase intention, but is affected by consumers' awareness and morality.

Keywords – green marketing, ethics, Machiavellianism, green awareness

* Weichieh Su is an Associate Professor of Department of International Business at National Chengchi University.

** Li-Keng Cheng is an Assistant Professor of Department of Business Management at Tatung University. (Corresponding Author) Email : lkcheng@gm.ttu.edu.tw

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1. Introduction

As today's society faces up to the challenges of climate change, increased awareness of the problems surrounding exacerbated air quality and environmental protection has caused consumers to become more concerned about the greenness of their purchases (Banerjee, Gulas, and Iyer 1995; Schuitema and De Groot 2015; Zhang and Hong 2013) and place greater emphasis on green awareness, including being aware of the impacts of a product on the environment and ecosystems (Suki 2013). Past literature has also indicated that consumers favor green products (Fay 1992; Davis 1993; Schuhwerk and Lefkoff-Hagius 1995; Tsen et al. 2006). For example, Fay (1992) has argued that American consumers have been paying more attention to green products since 1988, and that large amounts of marine debris washed up on the U.S. coast that year further prompted consumers to increasingly value green products. Tsen et al. (2006) also pointed out that more and more consumers have recognized that the quality of the current and the future living environments are, and will be affected by the natural ecosystems; therefore, more and more consumers were paying attention to green products. According to their research findings, consumers believed that buying green products could help maintain the natural ecosystems and strike a balance between humanity and the environment.

Nonetheless, a growing body of literature has indicated that consumers have different perceptions of green products, and that not all products are equally green (Gershoff and Frels 2015). Significantly, consumer preferences can be influenced by advertising claims (Borin, Lindsey-Mullikin, and Krishnan 2013; Green and Pelozo 2014; Olsen, Slotegraaf, and Chandukala (2014). For example, Cai and Xiao (2015) found that in green sales copy, emotional appeal was more likely than rational appeal to render consumers willing to purchase green products. Xie et al. (2014) also found in their research that consumer attitudes towards green products were influenced by information regarding timescale of environmental impact in advertising sales copy, and that short-term environmental claims had a greater effect on consumer attitudes towards green products than long-term environmental claims. From the foregoing literature, we see that consumers do not necessarily share the same degree of green awareness of products.

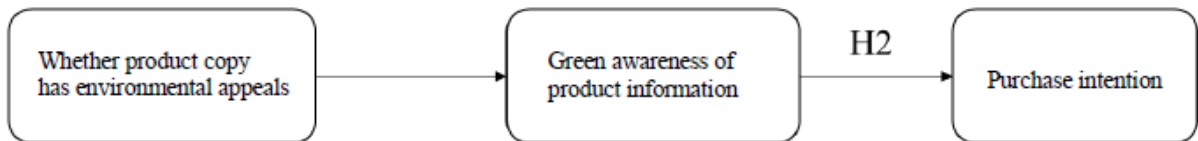
Indeed, when we review or peruse the product sales copy, the copy does not simply contain green information or general feature information; instead, the two types of information are mostly intermingled in the product copy. Therefore, this study aims to investigate whether consumer attitudes towards green products are influenced by green awareness. In other words, if consumers are not aware of the green information on the product when they read the sales copy that intermingles general information and green information, is their purchase intention of green products the same as that of general products? This research question is of both theoretical and practical importance. Studying the mediation effect of consumers on their purchases of green products is a key factor in understanding the decision making of consumers, and it may assist manufacturers in communicating with consumers or improving their marketing models. This is particularly urgent in present society, where the public is increasingly concerned about green products.

However, previous studies have also shown that personal qualities of consumers influence their green awareness (Thøgersen, Jørgensen, and Sandager 2012; Do Paço and Reis 2012; Cai and Xiao 2015). For example, Do Paço and Reis (2012) found that the more concerned consumers were about the environment, the more prudent and skeptical they were about green claims on packaging or in advertisements. Cai and Xiao (2015) also found that consumers who were active environmentalists themselves had a higher opinion of green brands. It can be inferred from the study by Cai and Xiao (2015) that consumers' own attitudes towards environmental protection affect their judgment, whereas Crane (2000) suggested that an individual's attitude towards environmental protection was related to his or her sense of morality; therefore, this study suggests that consumers' own sense of morality affects their green awareness. Within, an ethical framework, however, ethics and absolute morality are not mutually exclusive in any given individual, so a simple choice between utilitarianism or deontology cannot, in isolation, manifest one's moral sense. In addition, different scenarios induce different dimensions of morality in different individuals (Reidenbach and Robin 1988). Moreover, because one cannot objectively claim there is a right or wrong morality, nor a superior or inferior morality, it is impossible to assert the presence of which morality has normative significance. To address the above-mentioned dilemma arising from studying consumer morality, we have chosen the amorality of Machiavellianism to serve as the principal moral dimension. The concept of Machiavellianism explores the inclination of a person to manipulate power and influence to achieve his or her own ends (Calhoun 1969), and consists of four dimensions: amorality, desire for status, desire for control, and distrust of others. (Dahling, Whitaker, and Levy 2009). Unique among these, the dimension of amorality does not specify which morality is being manipulated, and therefore applies to every person or situation. We consider that if a person often changes his or her criteria for judging right and wrong based on his or her own self-interest, then such a person is amoral and more likely to apply arbitrary interpretations to the information in product sales copy. In other words, when product sales copy is mixed with general information and green information, people with low-level amorality are more likely to give equal weight to both types of information because they are less likely to change their moral standards at will. By contrast, people with high-level amorality typically determine which information is beneficial to them when weighing up to general information and green information. Thus, we deem that individual amorality moderates green awareness of product information, and likewise, the mediation effect of green awareness is also moderated by amorality.

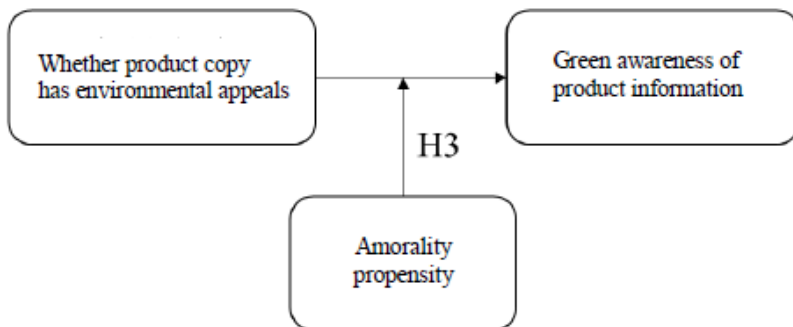
The research framework of this article is shown in Figure 1. In the following paragraphs, we introduce the relevant literature in order and form four hypotheses: the direct effect of green information in product sales copy on purchase intention, the mediation effect of green awareness, the moderating effect of amorality, and the moderated mediation effect. Afterwards, we explain how to validate our hypotheses through three various experiments. Finally, we integrate the results of the experiments for discussion and present their academic and managerial connotations.



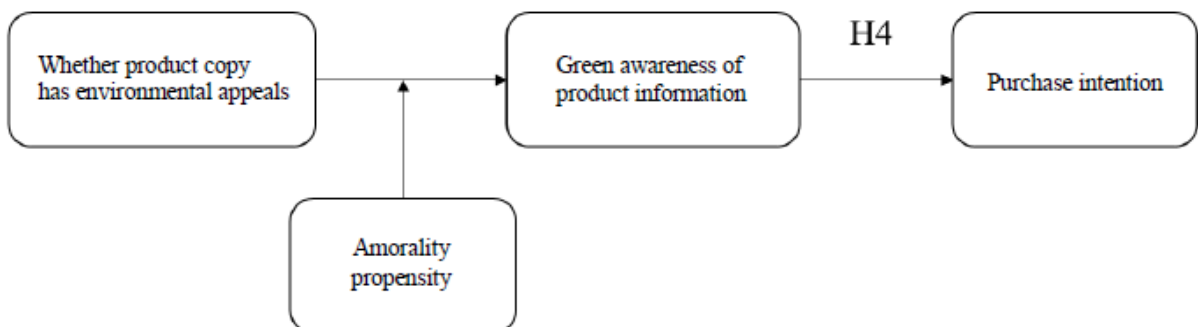
Examining direct effect of environmental appeals on consumer purchase intention



Examining mediation effect of green awareness of product information on the correlation between environmental appeals and consumer purchase intention



Examining moderation effect of amorality propensity on the correlation between environmental appeals and green awareness of product information



Examining the mediation effect of green awareness of product information on the correlation between eco-friendly claims and purchase intention is moderated by amorality propensity

Figure 1 Research Construct

Source: Summarized by the Authors

2. Literature Investigations and Research Hypotheses

2.1 Green Products, Green Awareness and Consumer Behavior

Previous studies have indicated that consumers prefer green products (Fay 1992; Davis 1993; Tsen et al. 2006; Paul, Modi, and Patel 2016). Davis (1993) found that if enterprises included elements relating to environmental protection in their advertising messages, consumers tended to think positively of those enterprises. In addition, this study found that enterprises needed to pay heed to the level of emphasis on, and the presentation of, their environmental claims, bearing in mind that the two aforementioned aspects had an interactive effect on the persuasiveness of environmental claims. Paul, Modi, and Patel (2016) also pointed out that because people were becoming increasingly aware of environmental issues, they were willing to support efforts to address such issues, and therefore, consumers were willing to pay a small price premium, or had a higher purchase intention, for green products. Based on past research findings, we believe that consumers are more willing to purchase green products with environmental claims because of both the trend in the external environment and internal values. As a result, we propose Hypothesis 1:

H1: Consumers are more willing to purchase green products with environmental claims than general products without environmental claims.

While we agree that consumers prefer green products, this agreement is based on the premise that consumers are effectively aware of green products. Marketing theory shows that awareness is an antecedent to interest generating and purchase, but in practice, product information is often complex, and the differentiation between green products and general products is impossible to define in a clear-cut manner. Moreover, even the sales copy of green products is mixed with a lot of general functional information. More importantly, consumers do not necessarily give more weight to green information than to general functional information. For example, the study conducted by Lin and Chang (2012) suggested that most consumers perceived green products to be less effective. The two researchers conducted three experiments and discovered that consumers generally perceived green or environmentally friendly products to be less effective than general, non-green products, so consumers tended to use green products in greater quantities to compensate for their perception that green products were less effective. In addition, this usage pattern of green and general products was more evident among eco-conscious consumers.

It can be inferred from Lin and Chang's study (2012) that when a product is presented with general functional information and green information intermingled, consumers may possibly devote greater attention to the general functional information to verify the performance of the product because they consider that perhaps the performance of green products may be poorer. In other words, the effect of information on green products may not be consciously realized by consumers to allow them to reach the further stage of absorption and awareness. Thus, pertaining to green products with a mix of general information and green information, whether consumers can effectively establish an awareness of green information is an important prerequisite for purchase intention. If consumers are unable to fully understand green information, then there can be little differentiation between green products and general products. Therefore, we assert that awareness of green information plays the key intermediary role in linking green products to purchase intention. Hypothesis 2 is as follows:

H2: Green awareness of product information has full mediation effect on the positive correlation between green claims and purchase intention.

2.2 The Role of Amoral Propensity in Moderating

Machiavellianism is the concept whereby a person, lacking moral will or moral sense, manipulates or exploits others to achieve his or her own ends (Calhoun 1969). Dahling, Whitaker, and Levy (2009) argued that Machiavellianism encompassed four major dimensions: amorality, distrust of others, desire for power, and desire for status. Scholars have studied and discussed the concept of Machiavellianism in the field of marketing, but mostly in terms of whether marketers are more inclined to Machiavellianism than other professionals (e.g., Hunt and Chonko 1984). No scholars have applied this concept to consumers, probably because the three dimensions of Machiavellianism - distrust of others, desire for power, and desire for status - are not closely related to consumer behavior. Therefore, we only use the dimension of amorality to investigate whether consumers' moral sense affects their understanding of green information and purchase intention. According to Dahling, Whitaker, and Levy (2009), however, amorality is the most pivotal of the four Machiavellian dimensions and has the greatest explanatory power.

Amoral individuals exhibit two characteristics: first, they purposefully manipulate others or do impression management; second, they exert greater moral flexibility when making decisions. However, this does not mean that they are intrinsically immoral, but rather that they would selectively change or deviate from their moral standards, especially when they can gain advantage or benefit. In other words, amoral individuals are willing to ignore moral principles to exploit others for their own gains (Dahling, Whitaker, and Levy 2009). Past research has also found that

individuals with high-level amorality are more likely to lie, steal, and deceive to increase their bargaining power (Gunthorsdottir, McCabe, and Smith 2002).

We contend that an amoral propensity in consumers affects their reading and absorption of green information on green products, thus moderating their green awareness. Individuals with high-level amorality are comparatively good at adapting tactics, so they do not interpret product information objectively. We surmise that when they read the sales copy of a general product, individuals with high-level amorality will choose to believe that the product is eco-friendly even if there is no green information in the sales copy. By contrast, when faced with a product that does not claim to be green, individuals with low-level amorality will respond that the product is not environmentally friendly. In other words, whether consumers are aware of green information is influenced by their moral sense. If one does not have a moral code, one can easily change one's moral standards to suit one's own objectives. Such individuals with high-level amorality, when faced with general products and green information, tend to distort the information in the product copy instead of simply accepting the information conveyed in the product copy. Their awareness will be different from that of typical individuals with low-level amorality. Hypothesis 3 is as follows:

H3: The relationship between green claims and green awareness is moderated by consumers' amorality propensity.

We previously proposed that whether consumers preferred to purchase green products was mediated by their green awareness. Here, we further argue that this mediation effect is influenced by consumers' amorality propensity because amorality affects consumers' interpretation of the green sales copy of products, which in turn affects consumers' green awareness (H3). When green awareness alters, the force of mediation effect also changes (H2). More specifically, we believe that the mediation effect of green awareness is less pronounced among individuals with high-level amorality. The reason is that individuals with high-level amorality alter their values and behaviors for their own benefits. They tend to do so, even if a green product contains green information, because their own interests may be compromised. For example, if the product is not as effective, individuals with high-level amorality are not willing to increase the amount or frequency of usage to the detriment of their own interests. Their green awareness of the product is reduced as a result, and the mediation effect of green awareness between green claims and purchase intention becomes inconspicuous.

When faced with products with no green information, individuals with high-level amorality will lie or deceive on behalf of their own benefits and further achieve impression management (Dahling, Whitaker, and Levy 2009; Hunter, Gerbing, and Boster 1982). Therefore, even if the products they buy are general products, they will claim to others that those products are genuinely green products for the purpose of impression management when the situation is favorable to them. Following the above reasoning, because individuals with high-level amorality selectively receive information or change their perception of information, a true green awareness, in their case, does not exist. Therefore, the mediation effect of green awareness between green claims and purchase intention becomes inconspicuous among individuals with high-level amorality.

By contrast, the mediation effect of green awareness is conspicuous among individuals with low-level amorality because individuals with low-level amorality do not alter their moral code readily. Therefore, when they receive green information mixed with other kinds of information in the sales copy of a product, they will naturally recognize the product as a green product and will not deliberately distort the connotation of the product information. Therefore, the green awareness of individuals with low-level amorality responds to the amount of green information contained in the product copy more accurately. Green awareness is high when the green claim of a product is high. The consumption pattern returns to the generic awareness-to-purchase path, whereby consumers prefer to buy green products. By this reasoning, when they are aware of green information about the product, individuals with low-level amorality will prefer to purchase green products which contain that green information. If they do not recognize green information in green products, then they tend to prefer green products as much as, but no more than, they prefer general products. Our Hypothesis 4 is as follows:

H4: The mediation effect of green awareness between green claims and purchase intention is moderated by amorality propensity of consumers.

3. Research Methods and Findings

This study aims to investigate the mediation effect and moderation effect of consumer preference for products with environmental claims. We argue that consumers prefer green products which have environmental information (H1), but whether consumers are aware of green information in advertising copy mediates product information and purchase intention (H2). We also argue that the amorality propensity of consumers acts to moderate their green awareness of product copy (H3), and that amorality propensity moderates the overall mediation effect of green awareness (H4). We designed three experiments to test the above hypotheses: Experiment 1 tested the main effect and

the mediation effect, then Experiment 2 tested the moderation effect and the moderated mediation effect, and finally, Experiment 3 tested our hypotheses in a specific context.

3.1 Experiment 1

3.1.1 Experiment Design

Experiment 1 was designed to test Hypothesis 1 and Hypothesis 2, that is, to investigate whether products contain environmental claims which affect consumers' purchase intention (H1) and the degree to which the effect of green claims on consumers' purchase intention is mediated by consumers' green awareness of product information (H2). Experiment 1 consisted of two test groups; advertisements for green products, which contained environmental claims and general functional information; and advertisements for general products, which only contained functional information. Subjects were randomly assigned to either type of advertisements for the experiment. We took the difference between the product advertisements containing environmental claims and those containing general messages to be whether the product advertisements mentioned that environmental protection had been considered during the manufacturing process for the purpose of manipulation. There was no significant difference in the number of words between the two versions of advertisement. For example, the advertisement containing environmental claims read, "The device is designed to be thin and lightweight, free of substances hazardous to the environment, using certified non-conflict minerals for raw materials and choosing premium suppliers". On the other hand, the sales copy of the general product read, "The device is designed to be thin and lightweight, easy for you to own, choosing premium parts suppliers with production marks."

3.1.2 Product Selection and Experiment Process

The main subjects in this experiment were university students or faculty members, so the product was selected for two primary reasons: a) the product was familiar to students or faculty members, and b) there was no gender bias/difference in the selection of the product. After the three scholars discussed the previously mentioned criteria, the product finally selected for the experiment was a laptop computer. The first phase of the experiment involved asking the subjects to read product advertisements for the laptop computer.

The advertisements were divided into two types, containing both general information and environmental claims, and containing only functional information without environmental concepts. The subjects were randomly assigned to one of the two types. After reading the advertisements, the subjects completed the second half of the questionnaire. The questions included "After reading this product information, would you consider buying this product?" which was framed to assess the subject's purchase intention for the advertised product, "I think this product information is environmentally friendly", intended to measure the level of the subject's green awareness of the product information, and "I think people who care about environmental protection would approve of this product information", designed to test manipulation. The above questions were all on a seven-point Likert scale.

3.1.3 Analysis Results

Subjects for this experiment were 155 randomly selected university students and faculty members, 62 males and 93 females, with an average age of 31 years. Firstly, we tested whether the manipulation in this experiment was conspicuous. According to the independent sample t-test analysis, the subjects regarded products with green claims ($n_{\text{products with green claims}} = 88$) as much more eco-friendlier than products without green claims ($n_{\text{products without green claims}} = 67$) ($t_{(153)} = 7.51, p < 0.05$; $M_{\text{products with green claims}} = 5.32$ vs. $M_{\text{products without green claims}} = 3.49$), indicating that the green claims succeeded in manipulation.

H1 predicts/assumes that consumers prefer products that contain green information. We used simple regression analysis to validate whether consumer purchase intention was influenced by green products that contained environmental claims. The dependent variable (i.e., consumer purchase intention) in the regression model was a seven-point scale, with the explanatory variables as dummy variables (i.e., green products or not, green products = 1; general products = 0) and age as the control variable. We found that the effect of green products on consumer purchase intention achieved significance ($\beta = 0.16, t = 1.99, p < 0.05$), and therefore, H1 is valid.

H2 maintains that recognition of green information causes a mediation effect between green products and purchase intention. This study adopted Model 4 of the PROCESS model templates of Hayes (2013) and used bootstrapping to generate 5,000 units from sampling, with replacement used to examine the mediation effect in H2. The results in Table 1 show that whether or not products contain green claims has conspicuous indirect effect on consumer purchase intention (95% confidence interval = [0.424, 1.054]), while the direct effect is inconspicuous (95% confidence interval = [-0.754, 0.212]). This means that consumer green awareness of product information has full mediation effect on whether a product containing green claims affects consumer purchase intention, and therefore, H2 is substantiated.

Table 1 Effect of product advertisements with or without environmental claims on purchase intention through green awareness of product information (Experiment 1)

95% Confidence Interval

Effect	Mediator Variable	Effect Size	Standard Deviation	Lower Limit	Upper Limit
Direct Effect		-0.271	0.244	-0.754	0.212
Indirect Effect	Green Awareness of Product Information	0.724	0.161	0.424	1.054

Note: Sample size = 155, Bootstrap sample size = 5,000, the values in bold in the table indicate statistically significant ($p < 0.05$).

Source: Summarized by the Authors

Based on the results of Experiment 1, this study discovered that consumers had a higher purchase intention for products containing green claims than for those without. This means that consumers were indeed more willing to purchase a product because it exhibited green elements. In addition, Experiment 1 found that the effect of inclusion of green claims by a product on purchase intention is fully mediated by consumer green awareness of product information. In other words, only when consumers recognize whether the advertising message has an eco-friendly constituent will their purchase intention be influenced.

3.2 Experiment 2

3.2.1 Experiment Design

Experiment 2 tested Hypothesis 3 and Hypothesis 4. The effect of the presence or absence of green claims on consumer green awareness of product information is moderated by consumer amorality propensity (H3), while the effect of the presence or absence of green claims on consumer green awareness of product information is moderated by consumer amorality propensity, subsequently affecting consumer purchase intention (H4). In addition to testing Hypothesis 3 and Hypothesis 4, Experiment 2 tested Hypothesis 1 and Hypothesis 2 again to examine whether this study made robust inferences.

Experiment 2 also consisted of two test groups; green products whose advertisements contained both green claims and general information; and general products whose advertisements contained no green claims. The subjects were randomly assigned to either group. As in Experiment 1, whether a product was a green product had been presented by manipulating the product advertisement, as was the question of whether the advertisement accentuated had considered environmental protection in the manufacturing process or whether the advertisement had specified environmental issues in the manufacturing process.

3.2.2 Product Selection and Experiment Process

Subjects for this experiment included undergraduates and graduate students. Product selection was based on three main reasons: a) the product was familiar to university students, b) there was no gender difference in familiarity with the product, and c) the product category was different from that in Experiment 1 to confirm the stability of Experiment 1 results. Pursuant to the foregoing conditions, the three scholars eventually chose running shoes as the product for this experiment. To prevent the subjects from being influenced by the brand or design preference, this study selected a lesser-known sports brand in the Taiwanese market for this experiment. Six students (three males and three females) were interviewed and asked to what extent they recognized and preferred the sports brand. All six students said that they were not familiar with the brand, but that they thought it was a real brand. They found the design unisex, and that black was a color suitable for both male and female students.

The experiment process was the same as in Experiment 1. The subjects were requested to read a product advertisement for running shoes. The product sales copy was presented in two forms, and the subjects were randomly assigned to either. The general appeal read, "Thin and breathable, with ultralight design for enhanced breathability, shock-absorbing and comfortable, with memory foam to absorb shock instantly, non-slip and durable, made of the same materials as skid-resistant tires". Alternatively, the green appeal read, "Thin and breathable, with ultralight design for enhanced breathability, shock-absorbing and comfortable, with memory foam to absorb shock instantly, eco-friendly and durable, made from recycled discarded skid-resistant tires."

After reading the advertisement, the subjects filled out a questionnaire regarding their purchase intention for the advertised product. Those questions included "If you were to purchase running shoes, how likely would you be to purchase the advertised product?", and "Do you think the advertised product will be well received by consumers when it is launched?" We measured the subjects' green awareness of the product information by means the following statements; "I think the advertised product eco-friendly"; and "I think the product information in the advertisement is

eco-friendly". In addition, the subjects were asked to complete the amorality propensity scale, the most important dimension of the Machiavellian scale developed by Dahling, Whitaker, and Levy (2009), which encompasses five statements: "I would be willing to do something immoral if it could bring me success," "I would be willing to destroy the efforts and results of others if they threatened my success," "I would choose to cheat if the chances of getting caught were low," "I think outperforming others entails telling lies," and "The only advantage of communicating with others is to get information that is useful for me." The last part of this experiment tested manipulation, and included measuring whether the subjects agreed that the advertisement appeal had green ingredients. The question presented was, "Do you think the running shoes in the advertisement are environmentally friendly?" All the above questions used a five-point Likert scale.

3.2.3 Analysis Results

Experiment 2 also randomly selected the subjects, choosing 136 undergraduates and graduate students, 29 males and 107 females, with an average age of 23 years. We first examined whether the manipulation in this experiment was conspicuous. The independent sample t-test confirmed that the subjects considered products containing green appeal to be much eco-friendlier than general products ($t_{(134)} = 6.07, p < 0.05$; $M_{\text{products containing green appeal}} = 3.75$ vs. $M_{\text{products containing no green appeal}} = 2.86$), indicating that the green appeal succeeded in manipulation. Moreover, the internal consistency reliability of the main variables in Experiment 2 was greater than 0.60 (purchase intention, Cronbach's $\alpha = 0.67$; green awareness of product information, Cronbach's $\alpha = 0.85$; amorality propensity, Cronbach's $\alpha = 0.79$; Fornell and Larcker 1981).

We adopted Model 4 of Hayes (2013) PROCESS to examine the mediation effect. The results in Table 2 show that the indirect effect of consumer green awareness of product information is conspicuous (95% confidence interval = [0.132, 0.552]), while the direct effect of the presence or absence of green appeal in product advertisements is inconspicuous (95% confidence interval = [-.368, 0.241]). This means that consumer green awareness of product information has a full mediation effect on whether a product containing a green appeal affects consumer purchase intention, and therefore, H2 is substantiated again in Experiment 2.

Table 2 Effect of Product Advertisements with or without Environmental Claims on Purchase Intention Through Green Awareness of Product Information (Experiment 2)

Effect	Mediator Variable	Effect Size	Standard Deviation	95% Confidence Interval	
				Lower Limit	Upper Limit
Direct Effect		-0.063	0.154	-0.368	0.241
Indirect Effect	Green Awareness of Product Information	0.320	0.109	0.132	0.552

Note: Sample size = 136, Bootstrap sample size = 5,000, the values in bold in the table indicate statistically significant ($p < 0.05$).

Source: Summarized by the Authors

We then adopted Model 7 of Hayes (2013) PROCESS to test Hypotheses 3 and 4. H3 asserts that the effect of green appeal on consumer green awareness of product information is moderated by consumer amorality propensity. Table 3 shows the results of the moderation effect when the dependent variable in the model is consumer green awareness of product information. The regression coefficients of the cross products are significant ($\beta = -0.5158, t = -2.044, p < 0.05$), indicating that the interaction effect of whether the product contains green appeal and consumer amorality propensity is significant ($F_{(1/131)} = 4.179, p < 0.05$).

Table 3 Moderation Effect of Amorality on the Correlation between Product Advertisements with or without Environmental Claims and Green Awareness of Product Information (Experiment 2)

	(Regression Coefficients)	Standard Deviation	t-value
Constants	0.877	0.707	1.241
Age	0.011	0.01	0.111
Whether ads have environmental claims	1.686**	0.401	4.208
Amorality propensity	0.767*	0.384	1.995
Whether ads have environmental claims x amorality propensity	-0.516*	0.252	-2.044

* $p < 0.05$. ** $p < 0.01$.

Source: Summarized by the Authors

Figure 2 further shows the interaction effect. We categorized the subjects into two groups, high-level amorality and low-level amorality, based on the median ($\text{Median}_{\text{amorality propensity}} = 1.8$). We found that consumers with high-level amorality were less likely to receive the green message delivered through the product advertisement when the advertisement contained both general information and green appeal ($M_{\text{high-level amorality}} = 3.74$ vs. $M_{\text{low-level amorality}} = 4.01$). By contrast, consumers with high-level amorality were more likely to think that a product might contain green information when the product advertisement did not contain eco-friendly information ($M_{\text{high-level amorality}} = 3.09$ vs. $M_{\text{low-level amorality}} = 2.84$). In other words, it is true that amoral people do not objectively perceive the information in the product exactly as it is presented; rather, they interpret the product copy in an arbitrary manner. Therefore, H3 is substantiated.

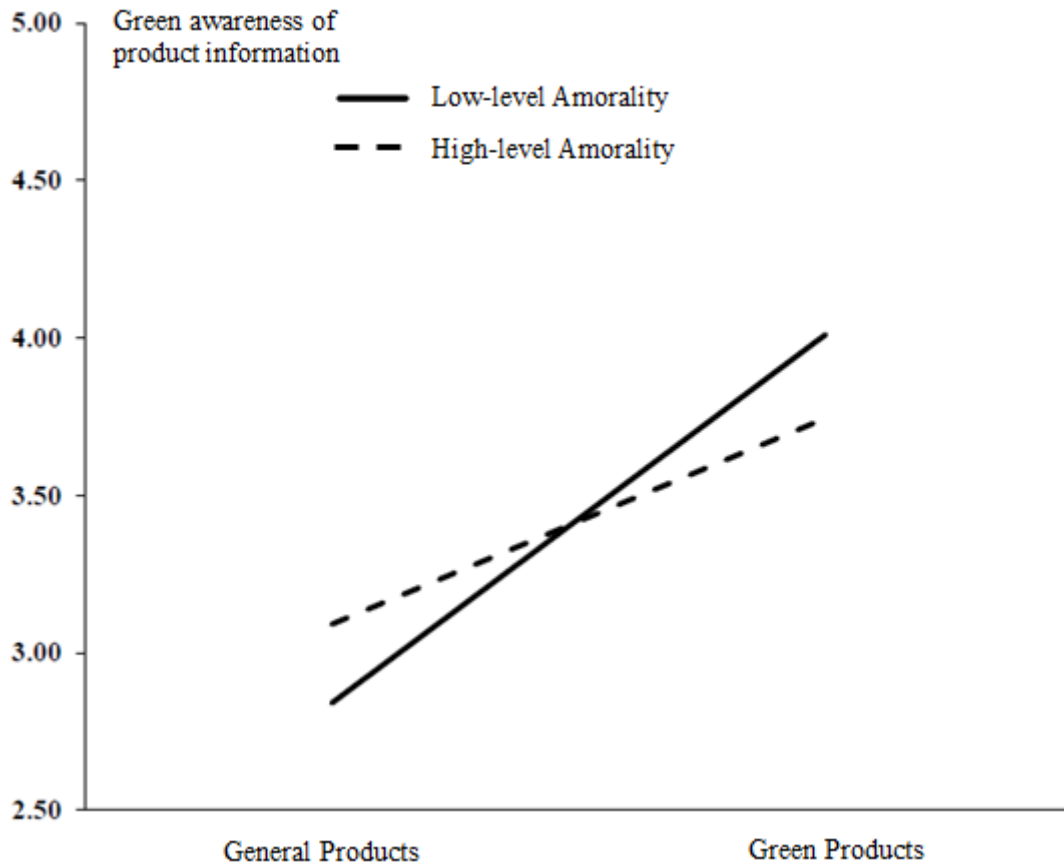


Figure 2 Moderation Effect of Amorality on the Correlation between Whether a Product is Green and Green Awareness of Product Information (Experiment 2)

Source: Summarized by the Authors

Finally, we adopted Hayes (2013) PROCESS Model 7 to test the moderated mediation effect predicted by our Hypothesis 4, which examines the effect of green products on consumer purchase intentions and the mediation effect of consumer green awareness of product information. The index of moderated mediation was found to be significant (95% confidence interval = [-0.388; -0.012]), revealing that the mediation effect of green awareness of product information, whether the product advertisement contains environmental claims, on purchase intention is, indeed, moderated by the level of consumer amorality. In addition, Table 4 further shows that regardless of the level of consumer amorality propensity, green claims have a significant indirect effect on purchase intention (indirect effect $\text{low-level amorality} = 0.414$; 95% confidence interval = [0.184, 0.698]; indirect effect $\text{high-level amorality} = 0.231$; 95% confidence interval = [0.667, 0.475]), and that the indirect effect is higher among those with low-level amorality than among those with high-level amorality. Therefore, H4 is substantiated in Experiment 2.

Table 4 Moderated Mediation Effect (Experiment 2)

	Moderator Variable	Indirect Effect	Standard Deviation	95% Confidence Interval	
				Lower Limit	Upper Limit
	Amorality Propensity				
Mediation effect of product environmental claims through green awareness	Low	0.414	0.131	0.184	0.698
	High	0.231	0.106	0.067	0.475

Note: Sample size = 136, Bootstrap sample size = 5,000, the values of the moderator variables are divided into two groups, high and low, based on the median (median = 1.8), and the values in bold in the table indicate statistically significant ($p < 0.05$).

Source: Summarized by the Authors

According to Experiment 2 findings, consumers had higher purchase intention for products which contained environmental claims than for those which did not. Experiment 2 findings also reaffirmed that the positive correlation between product environmental claims and purchase intention was fully mediated by a consumer's green awareness of product information. In addition, Experiment 2 found that when consumer amorality was comparatively low, consumer green awareness of product information was higher for products which contained environmental claims than for those which contained only general product claims. In cases when consumer amorality was comparatively high, however, whether or not the product contained environmental claims made no difference to consumer green awareness of product information. Furthermore, Experiment 2 found that the mediation effect of green awareness of product information, whether or not the product contained environmental claims, on purchase intention was less significant among those with high-level amorality than among those with low-level amorality.

3.3 Experiment 3

3.3.1 Experiment Design

Experiment 3 examined whether the results of Experiments 1 and 2 could be replicated in the presence of environmental fear appeals. We chose to insert an element of fear arousal because previous literature suggested that environmentally unaware consumers might develop environmental awareness when faced with environmental fears (Hartmann et al. 2014). Therefore, we wanted to examine whether the effect of the variable, consumer amorality propensity, would disappear and lose its moderation effect in the presence of environmental fear appeals (H3). We also tested the effect of the inclusion, or lack, of environmental appeals by products on consumer purchase intention and whether the mediation effect of consumer green awareness of product information would be moderated by consumer amorality propensity (H4) in the presence of environmental fear appeals. As in Experiment 1 and Experiment 2, Experiment 3 created two test groups, green products with environmental appeals in product advertisements and general products without environmental appeals in product advertisements. The subjects were randomly assigned to either. Whether or not the product advertisements contained green claims was manipulated in the same way as in Experiment 1 and Experiment 2.

3.3.2 Product Selection and Experiment Process

A scarf was selected as the product for this experiment after considering that, as with Experiment 1 and Experiment 2, the product was familiar to university students, and that there was no gender difference in familiarity or preference. In addition, we anticipated confirmation of the stability of Experiment 1 and Experiment 2 results across categories through the testing of different products. Therefore, a scarf was chosen for this experiment based on the above considerations after discussion among the three scholars.

The experiment process of Experiment 3 was generally similar to those of Experiments 1 and 2. The subjects were first asked to read an advertisement containing environmental fear appeals, which used texts and pictures to explain the possible consequences of not protecting the natural environment. Afterwards, the subjects were asked to read a product advertisement for a scarf. There were two types of advertisements. The green advertisement stated that the scarf, made from recycled, hand-drawn plant linen fibers, with properties of softness, warmth and lightness, was a natural and sustainable eco-accessory which could resist low temperatures. On the other hand, the general advertisement stated that the scarf, made from premium-grade, hand-drawn linen fibers, with properties of softness, warmth and lightness, was the best fashion accessory to resist low temperatures. The subjects were randomly assigned to one of the two types of advertisements and were asked to fill out the second half of the questionnaire after reading the advertisement. We assessed the purchase intention for the advertised product by asking, "If you were to purchase a scarf, how likely would you be to purchase the advertised product?" We then measured whether the subjects recognized the product information as eco-friendly by providing these statements: "I think the scarf in the

advertisement is eco-friendly" and "I think the information in the advertisement is eco-friendly". We also asked the subjects to complete the amorality propensity scale, which stated, "I would be willing to destroy the efforts and results of others if they threatened my success." The last part involved testing the effectiveness of manipulation, which included measuring whether the subjects agreed that the advertisement had environmental appeals, elicited with the question, "Do you think the advertised scarf is eco-friendly?" All the above questions were based on a five-point Likert scale.

3.3.3 Analysis Results

This experiment randomly selected 101 undergraduates and graduate students as subjects, 35 males and 66 females, with an average age of 21. We first examined whether the manipulation in this experiment was significant. The independent sample t-test confirmed that the subjects considered products containing environmental appeals to be much more eco-friendlier than products containing no environmental appeals ($t_{(99)} = 2.99, p < 0.05$; $M_{\text{with environmental appeals}} = 3.44$ vs. $M_{\text{without environmental appeals}} = 2.96$), indicating that when the advertisement contained environmental appeals, it succeeded in manipulation.

We adopted Model 4 of Hayes (2013) PROCESS again to examine the indirect mediation effect in H2. Table 5 shows that the indirect effect of consumer green awareness of product information is significant (90% confidence interval = [0.005, 0.202]), whereas the direct effect of the presence or absence of environmental appeals in products is insignificant (90% confidence interval = [-0.011, 0.556]). This reveals that consumer green awareness of product information fully mediates the effect of the inclusion of environmental appeals in the product on consumer purchase intention, and therefore, H2 is substantiated by the environmental fear appeals in Experiment 3.

Table 5 Effect of Product Advertisements with or without Green Manufacturing Process Claims on Purchase Intention Through Green Awareness of Product Information (Experiment 3)

Effect	Mediator Variable	Effect Size	Standard Deviation	90% Confidence Interval	
				Lower Limit	Upper Limit
Direct Effect		0.273	0.171	-0.011	0.556
Indirect Effect	Green Awareness of Product Information	0.088	0.062	0.005	0.202

Note: Sample size = 101, Bootstrap sample size = 5,000, the values in bold in the table indicate statistically significant ($p < 0.05$).

Source: Summarized by the Authors

We adopted Model 7 of Hayes (2013) PROCESS to test Hypotheses 3 and 4. H3 holds that consumer amorality propensity exerts a moderation effect on the awareness of green information. In other words, the interaction effect of the inclusion of environmental appeals and consumer amorality propensity is significant ($F_{(1/96)} = 5.227, p < 0.05$) when the dependent variable is consumer green awareness of product information. Table 6 shows the results of the moderation effect, revealing that the regression coefficients of the cross products are significant ($\beta = -0.3412, t = -2.286, p < 0.05$). It can be seen from Figure 3 that when consumer amorality is comparatively low, consumer green awareness of product information is higher for green advertisements than for general advertisements. When consumer amorality is comparatively high, however, whether the product contains environmental appeals or not makes no difference to consumer green awareness of product information. Therefore, H3 is substantiated in Experiment 3 as well.

Table 6 Moderation Effect of Amorality on the Correlation between Product Advertisements with or without Environmental Claims and Green Awareness of Product Information (Experiment 3)

	β (Regression Coefficients)	Standard Deviation	t-value
Constants	0.955	1.461	0.654
Age	-0.055	0.044	-1.261
Whether ads have environmental claims	1.019*	0.335	3.038
Amorality propensity	1.152*	0.536	2.150
Whether ads have environmental claims x amorality propensity	-0.341*	0.149	-2.286

* $p < 0.05$. ** $p < 0.01$.

Source: Summarized by the Authors

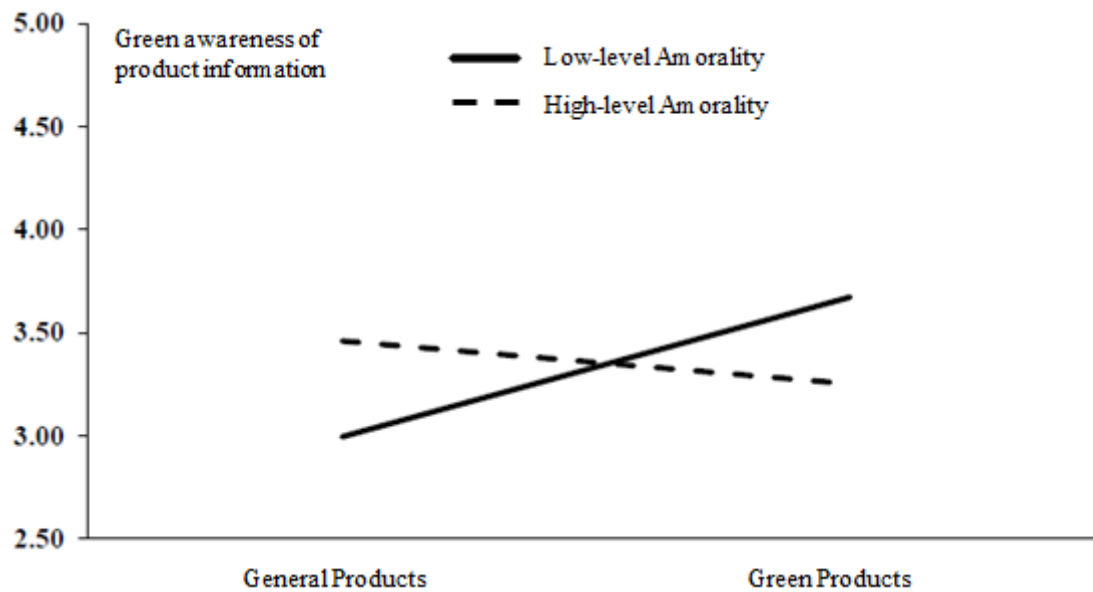


Figure 3 Moderation Effect of Amorality on the Correlation between Whether a Product is Green and Green Awareness of Product Information (Experiment 3)

Source: Summarized by the Authors

In addition, the index of moderated mediation in Hayes (2013) PROCESS Model 7 is significant (90% confidence interval = [-0.220, -0.003]), representing that the mediation effect of green awareness of product information, whether the product is green or not, on purchase intention is indeed moderated by consumer amorality propensity. In addition, Table 7 further shows that when consumers are of low- or medium-level amorality, whether product advertisements contain environmental appeals or not has significant indirect effect on purchase intention (indirect effect $_{\text{low-level amorality}} = 0.175$; confidence interval = [0.016, 0.384]; indirect effect $_{\text{medium-level amorality}} = 0.087$; confidence interval = [0.002, 0.197]). On the contrary, the indirect effect of the presence or absence of environmental appeals in product advertisements on purchase intention is not significant when consumers are of high-level amorality (indirect effect $_{\text{high-level amorality}} = -0.001$; confidence interval = [-0.121, 0.088]). The mediation effect is the most prominent among people with low-level amorality, beyond which point it becomes decreasingly prominent before disappearing among people with high-level amorality. Therefore, H4 is also corroborated in Experiment 3.

Table 7 Moderated Mediation Effect (Experiment 3)

Moderator Variable	Indirect Effect	Standard Deviation	90% Confidence Interval	
			Lower Limit	Upper Limit
Amorality Propensity				
Mediation effect of Low product environmental claims through green awareness	0.175	0.114	0.016	0.384
Medium	0.087	0.061	0.002	0.197
High	-0.001	0.063	-0.121	0.088

Note: Sample size = 101, Bootstrap sample size = 5,000, the values of the moderator variables are classified as mean (medium), mean +1 SD (high), and mean -1 SD (low), and the values in bold in the table indicate statistically significant ($p < 0.05$).

Source: Summarized by the Authors

4. Discussions and Recommendations

4.1 Summary of Results and Discussions

Many manufacturers incorporate green marketing elements into their marketing strategies to convey the message that the product is environmentally friendly to consumers through sales copy and to further arouse positive attitudes and purchase intention in consumers towards the product. However, it begs the question; how is the effect of such sales copy containing environmental claims on consumer purchase intention engendered? Significantly, most manufacturers fuse environmental claims and general product information, in many cases product features, in sales

copy and present it to consumers. In this context, one should ask, do all green advertisements render consumers more willing to buy? An equally valid question is, does the consumer's own sense of morality influence his or her ability to perceive and recognize the environmental claims in these advertisements? This study, by conducting the above experiments, investigates how consumers' recognition of environmental claims contained in advertisements affects their purchase intention for the advertised product at the moment they receive green advertisements. In addition, we explored how consumers' personal amorality moderates the correlation between green advertising and the recognition of environmental claims.

Based on the results of the three experiments, this study obtained four intriguing findings. First, when two advertisements had the same general product information, the green product with green appeals generated a higher purchase intention for the product than the general product without green appeals. This indicates that in present times, an era when the awareness of environmental protection is increasingly rising, consumers undoubtedly have higher purchase intention for products that contain environmental appeals. Second, the positive correlation between green appeals and purchase intention in product advertisements is fully mediated by consumer green awareness of product information. In other words, even though manufacturers add green appeals to their advertisements, the key to arousing positive attitudes and purchase intention in consumers towards the product lies in whether consumers recognize the inclusion of green appeals in product advertisements. If consumers fail to recognize the green appeals included in product advertisements, whether manufactures include green appeals in advertisements or not has no effect on their purchase intention.

Third, the effect of the inclusion of green claims in product advertisements or exclusion of green claims from product advertisements on the green awareness of product information is moderated by consumer amorality propensity. We found that when consumer amorality was comparatively low, consumer green awareness of green advertising was comparatively high. When consumer amorality was comparatively high, however, whether product advertisements contained green claims made no significant difference to consumers' recognition of the environmental information in those advertisements. This shows that the extent to which consumers recognize green messages when viewing product advertisements is influenced by their own amorality. That is to say, the more amoral consumers are, the more they are prone to distort product information, while, at the same time, they do not even acknowledge that messages with environmental components have green information. This finding is consistent with the paper by Dahling, Whitaker, and Levy (2009), which states that people with high-level amorality selectively neglect morality and engage in amoral manipulation when they perceive that they can gain benefits. Conversely, the more consumers value moral principles, the better able they are to take environmental appeals in green product advertisements seriously.

Finally, this study found that the mediation effect of green awareness of product information, namely, the presence or absence of environmental claims in product advertisements, on purchase intention was moderated by consumer amorality propensity. In other words, the individual amorality of consumers further influenced their purchase intention for the product by moderating the correlation between the presence or absence of environmental claims in the product advertisement and green awareness of product information. We found that the mediation effect of green awareness was less pronounced among individuals with high-level amorality. However, on the contrary, individuals with low-level amorality were more likely to interpret product information correctly, engendering greater mediation effect of the presence or absence of environmental claims in product advertisements on purchase intention. Bearing this in mind, we can assert that, a consumer moral orientation not only affects the effectiveness of manufacturers' green advertisements, but also consumers' willingness to purchase such green products.

4.2 Theoretical Contributions

This study has made the following theoretical contributions to relevant academic research. First, this study has extended the range of previous literature on green marketing to further identify important mediator variables (Zhang and Hong 2013; Cai and Xiao 2015; Xie et al. 2014). Most of the past studies on the effects of green advertising centered on the effects of the attributes of green advertising per se on the effects of green advertising. For example, Banerjee, Gulas, and Iyer (1995) argued that the structure of green advertising could be analyzed in three dimensions: sponsor type (for-profit or non-profit), advertising focus (whether the advertisement is focused on the advertiser or the consumer), and advertising depth (superficial, medium, or profound, depending on the extent of environmental information mentioned). Yang et al. (2015) went further to explore the effect of green advertising claims on advertising effectiveness. Their discovery was that intangible claims were more likely to produce green purchase intention than tangible claims when the benefits of green products were associated with others, and vice versa. Some studies focused on the effect of audience personality traits on the effectiveness of green advertising. For instance, Do Paço and Reis (2012) investigated whether consumers' concern for the environment would affect their acceptance of green advertising. The researchers discovered that the more concerned consumers were about the environment, the more incredulous they were of green advocacy on packages or green information in advertisements. However, few studies in the past have considered the possible influence of mediating factors. This study has introduced a new key mediator to research on green advertising: recognition of green information. Furthermore, this study has found that the

correlation between whether the product contains environmental claims and purchase intention is fully mediated by consumer green awareness of product information; in other words, whether consumers recognize the green elements in advertising messages is the key factor in the effectiveness of green advertising. This particular finding echoes the conclusions of the researchs conducted by Do Paço and Reis (2012). In addition, the proposition of this study that recognition of green information acts as a mediator variable in the process whereby green advertising encourages purchase intention has not drawn attention or prompted specific investigations into previous literature on marketing and consumer behavior. For these reasons, this study is novel.

Second, the moderator variable proposed in this study, amorality in terms of Machiavellianism, has, so far, received little investigation in the past literature on green advertising. Past research on green marketing has mostly discussed the recognition and influence of the consumer's environmental consciousness on consumer behavior (Davis 1993; Lin and Chang 2012; Tsen et al. 2006; Cai and Xiao 2015). However, recent literature clearly indicates that the personality traits and moral beliefs of consumers have a considerable impact on their environmental behaviors and attitudes (Do Paço and Reis 2012). Therefore, consumer amorality propensity is highly likely play a significant role in green advertising. This study, in putting forward key and novel findings for green marketing research, is the first study that has investigated the possible effects of amorality in terms of Machiavellianism on purchase intention aroused by green advertisements and has specifically pointed out that green advertisements might be far from effective in cases when Machiavellian amorality is of a high level.

4.3 Practical Implications

In the past, the industrial and technological revolutions boosted economic development, yet the natural environment fell victim to damage. Nature's backlash has urged governments and citizens to ponder together the issues surrounding the question of how to develop and coexist with the environment in a sustainable, mutually beneficial way. In recent years, consumers have become increasingly concerned about the environment, while simultaneously, indulging themselves in progress and wealth. Whether it be personal life and behavior or purchased products, environmental awareness is a key consideration. For example, because disposable straws and plastic bags have a negative impact on the environment, today an increasing number of people have stopped using disposable products and start buying non-disposable bags and straws to carry around. Moreover, the government has initiated legislation to ban the provision of free disposable plastic bags. To ride the wave of environmental protection, manufacturers constantly launch eco-friendly tableware (Chen and Chang 2013; Dangelico and Pujari 2010). In addition, many products are marketed with an emphasis on their green characteristics, such as the use of eco-friendly materials, the use of eco-friendly manufacturing processes, or the claim that the use of their product will not have a negative impact on the environment. Such marketing approaches differ from strategies adopted in the past, whose sole emphasis was on price and product practicality. Both consumer intention and consumer behavior have turned their focus towards green products, and enterprises have swiftly taken advantage of this trend, incorporating green appeals into product copy to attract consumers and consolidate their preference and willingness to buy such products.

According to the results of this study, product copy that fuses green appeals and general appeals generates higher consumer purchase intention than product copy that does not contain green appeals. Thus, if a company wants to present general information and green information in the same product copy due to of a limited marketing budget or other such factors, the marketing staff can deliver a green message to consumers by using this type of product copy.

However, manufacturers are advised to note that the key factor in the advertising effect of green appeals is whether consumers can recognize the green message in the advertisement. In other words, if consumers cannot perceive or adequately understand the green information blended into the rest of the advertisement material for personal or environmental reasons, purchase intention will not be effectively heightened. Thus, it is crucial for manufacturers that execute green marketing to present advertisements in such a foolproof way that consumers are aware of the green information added to the advertisements.

Finally, according to the results of this study, consumer perception of green information in product advertisements is moderated by the level of amorality in, and known as, Machiavellianism. After viewing product copy which contains green information, people of high-level amorality may deliberately ignore or doubt the content of environmental claims instead of readily accepting the green messages manufacturers want to convey. By contrast, people of high-level amorality viewing product copy which does not contain green information will be highly motivated to lie to others saying the product has eco-friendly factors if they find doing so benefit themselves. Therefore, marketers need to be aware of the occurrence of this phenomenon after determining marketing tools. They may not always be able to deliver the green message they want to, so it is even more important to analyze its effectiveness afterwards. If the product copy does not produce the desired effect, the marketers can explore this aspect of Machiavellianism to find a solution.

4.4 Research Limitations and Directions for Future Research

Although the findings of this study have made contributions to relevant academic research and practice, there are some limitations that need to be further addressed in future research. Firstly, the products used in this study are laptop computers, running shoes and scarves, all of which are products relatively functional. However, many experiential products may offer consumers different and more varied experiences and perceptions because of their green features, such as strengthened or weakened product effects (Lin and Chang 2012; Olson 2013). Future research could further investigate whether the mediation effect of green message recognition on green advertising could be applied to experiential products, for example, perfumes or meals, to further generalize and broaden the findings of this study.

The second research limitation is the sample characteristics. Most of the subjects in this study were undergraduates and graduate students, whose average age was relatively young. Limitations may occur when the results are spread throughout all age groups. For example, the ability to absorb complex information varies across age groups. Young people are frequently exposed to social software and media messages, so they may be better able to interpret and accept advertising messages than older people. When viewing a product copy that contains both general claims and green claims, youngsters are more likely to receive the green message mixed in the complex advertisement and thus consider product copy which contains green information to be eco-friendlier than product copy which does not. The elderly, on the other hand, may not notice the green message and think that there is no difference between the two types of product copy in the level of environmental protection when they are not as adept at receiving information from, and recognizing the subtleties of, product copy. Furthermore, amorality in Machiavellianism is influenced by past personal upbringing experiences of consumers (Mudrack 1989). Therefore, the study is limited by the fact that most of the subjects were students, whose amorality level could be relatively low and could not be generalized and applied to the wider population.

In addition to the above research limitations, future researchers may explore other possible effects of amorality in Machiavellianism on environmental consumption. For example, it is worth exploring whether neglect or misinterpretation of moral concepts brought about by amorality may lead consumers to environmentally friendly consumption or choose greener products. Lastly, future researchers may also explore other consumer personal factors and advertising context factors which may have a moderating effect on the main causal relationship "green advertising — green information recognition — purchase intention" in this study.

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