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### Effectiveness of environmental advertising for hotels

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## **Effectiveness of environmental advertising for hotels**

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## **Effectiveness of environmental advertising for hotels**

### **Abstract**

This study investigates how a hotel's brand and an environmental issue featured in the hotel's advertising may influence consumers' responses. The study adopts a 2x2 factorial design. The first factor is the hotel brand. Two hotels (i.e. Hilton and Ibis) were selected to represent relatively high-end and low-end hotel brands respectively. The second factor is the environmental issue featured. Energy saving and absence of single-use consumables were selected. A total of 237 university students in Hong Kong participated in the study. Results indicated that the two independent variables, had significant impact on attitudes towards advertisements, brand image and perceived effectiveness of the advertisements.

**Keywords:** environmental advertising; ad effectiveness; experimental design; Chinese consumers; hotel marketing

## **Effectiveness of environmental advertising for hotels**

### **Introduction**

As consumers are increasingly conscious about the impact of their consumption behaviors on the environment, companies are eager to use environmental advertising to establish trust and positive brand image among consumers (Davis, 1994).

Environmental advertising has been used mainly for products (Polonsky et al., 1998).

In the past decade, the services industry joined the trend in adopting environmental advertising to enhance consumers' acceptance of the industry's intangible offerings (Conlin, 2000). Several studies examine the effectiveness of advertisements with environmental claims using experimental design. The research literature found that environmental claim type, the source country's green image, and product involvement were significant factors in influencing consumers' responses to environmental advertising (Chan, 2000; Chan, Leung & Wong, 2006). There are still questions that we do not have answers for in environmental advertising. When an advertiser considers using corporate green advertising, which environmental issue should be featured? Is featuring a global issue more effective than featuring a local issue? Is featuring an environmental issue that is perceived by consumers to have high environmental impact more effective than featuring an environmental issue that is perceived by consumers to have low environmental impact? Compared with a relatively low-end brand, will a high-end brand benefit more from environmental advertising? Answers to these questions will help advertisers in developing effective communication strategies leveraging on perceived environmental contributions.

### **Literature review**

## **Environmental advertising and environmental claims**

Environmental advertisement was defined by Banerjee, Gulas and Iyer (1995) as an ad addressing the relationship between a product/service and the biophysical environment, promoting a green lifestyle, or presenting a corporate image of environmental responsibility. Davis (1994) classified environmental advertising into three types, namely money-focused, showing the corporate's monetary grants to improving the environment; resources-focused, showing the corporate's preservation activities; and corporation-specific-activities-focused, showing the corporate's specific participation in environmentally responsible behaviors.

Scholars have also attempted to classify environmental advertising claims. Using content analysis, Carlson, Grove and Kangun (1993) developed a typology of four types of environmental advertising claims, namely (i) product orientation, focusing on the environmental attributes of a product; (ii) process orientation, emphasizing the eco-friendliness of an organization's technology and method in the process of production and disposal; (iii) image orientation, associating an organization with an environmentally friendly image; and (iv) environmental fact, involving an independent statement of the environmental situation such as "The world's rain forests are being destroyed at the rate of two acres per second" (Carlson et al., 1993).

Carlson, Grove, Kangun and Polonsky (1996) re-examined the four categories of environmental claims and summarized them into two types—substantive claim and associative claim. Claims about the product and the process orientations were regarded as substantive claims because they presented concrete information about the environmentally responsible efforts of an organisation (Carlson et al., 1993; Ottman, 1995). Image orientation and environmental fact were conceived as associative claims. These claims were less tangible in nature, assisting an organization in establishing an

environmentally friendly image by associating it with positive environmental information. However, these claims did not mention directly how they contribute to ecological well-being in a specific way (Carlson et al., 1996).

### **Effectiveness of environmental advertising**

Environmental advertising has been increasingly adopted to enhance product or service marketing. A recent survey found that environmental advertising has been widely used in China (Chan, 2004). Given this, there is a need to investigate the communication effectiveness of environmental advertising. To this end, various factors have been taken into consideration. The key environmental advertising variables include environmental claim type (Alniacik & Yilmaz, 2012; Carlson et al., 1996; Chan & Fan, 2013; Chan & Lau, 2004; Chan et al., 2006; Davis, 1993; Hu, 2012), brand image (especially country image or country disposition) (Chan & Fan, 2013; Chan & Lau, 2004; Davis, 1994; Goldberg & Hartwick, 1990; Gotlieb, 1992), and consumers' environmental concerns (Chan, 2004; Chan & Lau, 2000; 2004).

Most scholars explored the influence of claim types on environmental advertising effectiveness. Davis (1993) held the view that specific environmental claims that provide detailed, relevant, and supported information would generate higher effectiveness than vague environmental claims. This viewpoint was supported by empirical studies using experimental design (Alniacik & Yilmaz, 2012; Carlson et al., 1996; Chan & Fan, 2013; Chan & Lau, 2004; Chan et al., 2006). Findings revealed that substantive environmental claims are more effective than associative environmental claims in environmental advertising, when other things are equal. Along with the finding that Chinese consumers think more highly of the information content than of the entertaining features of advertisements (Zhao & Shen, 1995), Chinese consumers' preference for substantiated claim is undoubted (Chan, 2000; 2004). In the hotel

industry, it was confirmed that advertisements adopting substantive claims were found to be more effective than advertisements adopting associative claims (Hu, 2012).

With respect to corporate or country image, Davis (1994) found that environmental advertising generated a more positive response when the pre-existing evaluations of the corporate were favorable. This finding is consistent with the previous studies that consumers' attitude and behavioral intention were more positive in cases where prior perceptions of a corporate were positive (Goldberg & Hartwick, 1990; Gotleib, 1992). In another study, participants found substantive claims more effective than associative claim, and an ad featuring a global environmental issue more favorable than an ad featuring a local environmental issue for a bank with a positive corporate image. For participants reading advertisements of a bank with a less positive image, environmental claim type and environmental issue had no influence on advertising effectiveness (Chan & Fan, 2013). Similarly, scholars noted that perceived country of origin could influence the environmental advertising effectiveness (Chan, 2000; Chan et al., 2006; Manrai, Manrai, Lascu & Ryans, 1997). The influence of country image moderated the claim type-effectiveness relationship (Chan & Lau, 2004). When perceived country image was positive, substantive claims would be more effective in environmental advertising. When perceived country image was negative, substantive claims would make the environmental advertising less effective. However, a significant country image effect was exhibited only in high-involvement purchases (Chan & Lau, 2004).

Consumers' environmental concern was also found to have significant influence on the effectiveness of environmental advertising (Chan, 2004; Chan & Lau, 2000; 2004). Chan and Lau (2004) found that consumers with strong concern for the environment had a more positive response towards environmental advertising than consumers with weak environmental concern. The same study (Chan & Lau, 2004) also revealed the

moderating effect of consumers' environmental concerns jointly with country image. That is, no matter which kind of environmental claim is adopted, when consumers hold a positive country image, those with strong environmental concern have more positive attitudes towards environmental advertising and brand images. Despite the attitudinal differences, consumers' intentions were not significantly influenced by this moderating effect (Chan & Lau, 2004). As with the moderating effect of country image, the joint moderating effect of country image and consumers' environmental concern was found in high degree of consumer involvement in the purchasing process (Chan & Lau, 2004).

The impact of ecological affect and ecological knowledge on green purchase intention and green purchase among Chinese consumers was investigated. The results revealed a strong positive relationship between ecological knowledge and purchase intention as well as purchase behavior (Chan & Lau, 2000).

To summarize, the review of literature identifies environmental claim type, corporate or country of origin image, consumers' environmental concern, and environmental issue featured in advertising as important factors that play a role in the effectiveness of environmental advertising. From the message design point of view, advertisers should focus on factors over which they have control. In the case of environmental advertising in the hotel industry, advertisers often need to make decisions about which environmental issue should be featured in the advertisements. It was found that consumers had different perceptions of what a green hotel should do or should be (Han & Chan, 2013). Environmental issues relevant to the hotel's operation were perceived to have high or low impact on the environment. It is not known whether the environmental issue featured in a hotel's environmental advertisements has an influence on the effectiveness of its environmental advertising.

### **Research objectives**

This study aims to investigate how the hotel's corporate image and the environmental issue featured in the advertisement influence consumers' responses, including attitudes and purchase intentions.

## **Methodology**

### **Study design**

A 2×2 factorial design experiment was designed. The factors were the hotel's brand (high-end hotel, low-end hotel) and the environmental practice in the hotel (energy saving, no single-use consumables). Based on subjective judgment, Hilton Hotel and Ibis Hotel were selected as a high-end and low-end hotel brand, respectively. Energy saving and no single-use consumables were selected as the environmental practices that represent high and low environmental impact respectively, as found in a previous qualitative study (Han & Chan, 2013).

### **Experimental instrument**

Four print advertisements of two hotels were created exhausting all combinations of the 2x2 conditions. The advertisement featured the logo of the hotel (either Hilton or Ibis) at the top that followed with the headline "Hilton/Ibis strives to make a contribution to the environment". In the middle, a visual of the interior of a hotel room was shown. The lower one third of the ad featured either a photo of solar energy panels on the rooftop or a photo of a pair of hands drawing soap from a dispenser. The ad closed with an invitation to book online with the display of the website address, the price (HK\$1,599 for Hilton; HK\$799 for Ibis), and the brand identity. A demonstrator teaching visual communication at a university helped to prepare the layout. All stimulus materials were developed in Chinese. All advertisements had the same layout. Substantive environmental claims were used for both environmental practices in the advertising

body copy. For the ad on energy saving, the body copy described how the recycled heat from the boilers resulted in saving of 27% of energy and the installation of solar energy generator resulted in saving of 18% energy. For the ad on no single-use consumables, the body copy described how the installation of refillable soap dispenser resulted in saving of 27% of soap and encouraged hotel customers to bring their own hygiene set, resulting in saving of 18% of consumables.

### **Pilot study**

A pilot study was conducted. Three undergraduate students from a university were invited to read the questionnaires thoroughly and reported to us whether the questions were clear and unambiguous. Minor revision was made according to their comments.

### **Subjects and procedures**

The data were collected in December 2012. A convenient sampling method was used.

The experiment was conducted among 237 students of a university in Hong Kong.

Permission was obtained from instructors of five classes to distribute the questionnaires during class breaks. Participation in the study was voluntary and no incentive was given to the respondents. According to Calder, Phillips, and Tybout (1981), a student sample demonstrates a high level of homogeneity in terms of prior brand knowledge, education level and age. As students are likely to be tourists or business travelers in the near future, a student sample is appropriate for this experiment.

Four sets of questionnaires were developed. Each questionnaire contained one of the four possible combinations of advertisements. The questionnaire was modeled after a previous study on effectiveness of environmental advertising in the bank industry (Chan & Fan, 2013).

The four sets of questionnaires were distributed to the students randomly. Before reading the advertisements, respondents were asked about their environmental

concerns and their attitudes toward advertising in general. Environmental concern was measured by a 5-point Likert scale using three statements, including “I’m really concerned about global warming/waste disposal/energy saving.” The Cronbach’s alpha for environmental concern was 0.84.

After reading each advertisement, respondents answered questions about perceived brand image, attitudes toward the advertisements, and perceived effectiveness of the advertisements. Brand image was measured for five items with a 7-point semantic scale. The items were familiar/unfamiliar, green/non-green, reliable/not reliable, high end/low end, and modern/traditional. The Cronbach’s alpha for brand image was 0.77. Attitudes toward advertisements were measured for seven items with a 7-point semantic scale. The items were trustworthy/not trustworthy, convincing/unconvincing, positive/negative, creative/dull, favorable/unfavorable, meaningful/meaningless, and highly relevant to me/not relevant to me. The Cronbach’s alpha for attitudes toward advertisements was 0.91. Effectiveness of the advertisements was measured by three items. They were: (1) “After reading the advertisement, I have a good image of the advertised hotel.” (2) “After reading the advertisement, I think this hotel demonstrates social responsibility.” (3) “After reading the advertisement, I will consider to be their customer.” Respondents were asked to rate their agreement to the statements on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). The Cronbach’s alpha for advertising effect was 0.79. In view of the high Cronbach’s alpha coefficients, composite scores were compiled for environmental concern, attitudes towards advertisements, brand image, and advertising effect by taking the mean of the component items.

To verify that the two environmental practices featured in the advertisements had different perceived impacts on the environment and different levels of acceptance by

consumers, we asked the respondents to rate on a 5-point Likert scale how much they agree that the environmental practice can make a contribution to the environment (1 = strongly disagree; 5 = strongly agree) and that they like the environmental practice (1 = strongly disagree; 5 = strongly agree). The last part of the questionnaire collected demographic characteristics of the respondents.

## **Findings**

Altogether 240 questionnaires were collected. Three questionnaires were invalid due to a substantial number of incomplete questions, resulting in a final sample size of 237. Seventy percent of respondents were female and 30 percent male. Seventy-three were enrolled in an undergraduate program while 27 percent were in a postgraduate program. Seventy-six percent were students from Hong Kong and 24 percent were students from mainland China.

### **Manipulation check of the environmental practice**

A manipulation check was conducted prior to data analysis to examine if the two selected environmental practices are perceived to have significant different impacts.

A *t*-test found that respondents perceived that the two featured environmental practices had different degrees of contribution to the environment. Energy saving ( $M = 3.6$ ,  $SD = 0.8$ ) was perceived to have a greater contribution to the environment than no single-use consumables ( $M = 3.2$ ,  $SD = 0.9$ ),  $t(235) = 3.18$ ,  $p = 0.002$ . Also, respondents liked energy saving ( $M = 3.4$ ,  $SD = 0.9$ ) more than no single-use consumables ( $M = 3.1$ ,  $SD = 0.9$ ),  $t(235) = 2.51$ ,  $p = 0.013$ . Again, our manipulation of the environmental practice was confirmed to be valid.

**Do attitudes towards the advertisements, brand image, and advertising effect depend on the environmental practices as well as the hotel featured?**

Multivariate analysis of variance (MANOVA) was used to test the 2×2 factorial model. No serious violations to assumptions related to normality, linearity or heteroscedasticity were detected. Table 1 summarizes the MANOVA results. Table 1 and 2 showed that the independent variable of hotel had main effect while the independent variable of environmental practice had no effect on the three dependent variables. The two factors combined did not demonstrate a significant interaction effect on the three dependent variables.

To aid interpretation, univariate analysis of variance (ANOVA) was performed. The hotel featured in the ad had main effect on brand image. Participants perceived Hilton ( $M = 4.2$ ) more favorably than Ibis ( $M = 3.6$ ),  $F(1, 233) = 13.69, p < 0.001, \eta^2_p = 0.06$ . The environmental practices had main effect on advertising effect. The ad featuring energy saving ( $M = 3.2$ ) demonstrated a more favorable advertising effect than the ad featuring no single-use consumables ( $M = 3.0$ ),  $F(1, 233) = 4.3, p < 0.05, \eta^2_p = 0.02$ . The interaction of hotel and environmental practice had no influence on all three dependent variables.

[Insert Table 1 and 2 about here]

### **Do participants' environmental concerns have an impact on the effectiveness of environmental advertising?**

A series of multiple regression analyses were conducted to predict attitudes towards the advertisement, brand image, and advertising effect based on participants' environmental concern (in interval scale), hotel, environmental practice, the interaction of the participants' environmental concern and hotel, and the interaction of the participants' environmental concern and environmental practice. Participants' environmental concern, hotel, and environmental practice were first mean centered in forming the interaction term aiming at minimizing collinearity (Aiken & West, 1991).

Participants' environmental concern, hotel, and environmental practice were entered in the first step, and the interaction term of participants' environmental concern and hotel, as well as the interaction term of participants' environmental concern and environmental practice were entered in the second step.

Table 3 shows a summary of the results with respect to attitudes towards the advertisement, brand image, and advertising effect. Participants' environmental concern was positively associated with attitudes towards the advertisement. After controlling for the participants' environmental concern, hotel, and environmental practice, the interaction term of participants' environmental concern and environmental practice was negatively correlated with attitudes towards the advertisement. The link between participant's environmental concern and his or her attitudes towards the advertisement was moderated by which environmental practice the participant had viewed. Among participants who viewed the energy saving advertisement, participants with higher environmental concern scores were more likely to have favorable attitudes towards the advertisement,  $r = 0.38, p < .001$ . In contrast, among participants who viewed no single-use consumables advertising, participants' environmental concern was not correlated with attitudes towards the advertisement,  $r = -0.04, n.s.$  The interaction effect is shown in Figure 1.

ANOVA and multiple regression analyses generated two similar observations. First, participants had a more favorable perception of the image of Hilton than of Ibis. Second, the advertising effect of energy saving was higher than no single-use consumables. After controlling for the participants' environmental concern, hotel, and environmental practice, the interaction term of participants' environmental concern x environmental practice was negatively correlated with advertising effect. The link between a participant's environmental concern and the effectiveness of the advertisements was

moderated by which environmental practice the participant had viewed. Among participants who viewed the energy saving advertisement, environmental concern was positively associated with advertising effect,  $r = 0.27$ ,  $p = 0.006$ . In contrast, among participants who viewed the no single-use consumables advertisement, environmental concern was not correlated with advertising effect,  $r = -0.05$ , *n.s.* The interaction effect is displayed in Figure 2.

The interaction of environmental concern and hotel, as well as the interaction of environmental concern and environmental practice, had no impact on brand image. Brand image was only affected by the hotel brand.

[Insert Table 3 about here]

[Insert Figure 1 and Figure 2 about here]

## **Discussion**

An experimental study was conducted to examine how the hotel brand and the environmental issue featured in the advertisement have an impact on consumers' responses to the advertisements.

The multivariate and univariate analyses suggest that the hotel's brand name and the environmental issue featured in the advertisement have an impact on attitudes toward the advertisements, perceived brand image, and advertising effectiveness. Based on the research findings, we have three observations. First, the advertisement featuring an environmental practice perceived to have higher impact on the environment was found to generate a more favorable advertising effect than the advertisement featuring an environmental practice perceived to have lower impact on the environment. The result was consistent with a previous study showing that a bank advertisement featuring a global environmental issue was found to generate more favorable advertising effect

than a bank advertisement featuring a local environmental issue was found to generate more favorable advertising effect than a bank advertisement featuring a local environmental issue (Chan & Fan, 2013). This indicates that when environmental advertising is used, the consumers are paying attention to how advertisers are able to make a difference to the environment. By tackling an environmental issue that has a big impact, advertisers are more likely to be perceived favorably.

The second observation is that brand image is a robust characteristic, and is not affected by either the environmental practice featured in the advertisement or the consumers' environmental concern, or by their interactions. In the current study, brand image was only affected by brand name. The finding suggests that brand equity takes much more effort to build than advertising effectiveness. A hotel's brand image is likely to be built upon a marketing mix, including pricing, product delivery, and marketing communications. Advertising alone has a limited contribution to the development of the brand image. Advertisers should realize that employing environmental advertising alone is insufficient to establish a distinctive and positive brand image. Advertisers therefore are advised to invest in a comprehensive marketing communication program to communicate their environmental initiatives, rather than relying on advertising efforts only.

Thirdly, consumers' environmental concerns had an impact on attitudes toward advertisements as well as the advertising effect only for an environmental practice with high impact, and not for an environmental practice with low impact. In other words, when an environmental advertisement featured a high-impact issue, consumers who had a higher concern for the environment were more affected by the ad than consumers who cared less for the environment. However, when an environmental advertisement featured a low-impact issue, consumers with high or low environmental concern were affected to a similar degree. The finding suggests that when an environmental issue

with low impact is featured in advertising, the message is not strong enough to trigger cognitive elaboration about the environmental issue and the possible contributions the advertiser can make. In other words, consumers fail to see how the advertiser can make a difference. This result again points to the importance of featuring an environmental practice that is perceived to have high impact among consumers.

### **Marketing implications**

The aforementioned findings provide useful insights to hotel advertisers for promoting a green image among consumers. Advertisers should select relevant environmental practices that are perceived as having high impact on the environment among their prime target customers. This information can be obtained through literature review or a focus group study. Attitudes towards advertisements as well as advertising effect were similar between ads for Hilton and ads for Ibis. This indicates that advertising effect was not affected by brand names. The implication is that low-end and mid-range hotel advertisers will also benefit from environmental advertising. These advertisers should be encouraged to consider environmental advertising in promoting their business.

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**Table 1.** Multivariate analysis (MANOVA): Influence of hotel brand and environmental practice (EP) on attitudes towards the advertisement, brand image, and advertising effectiveness ( $N = 237$ )

Variable	Statistics assessing multivariate difference	F-value
Hotel	Pillai's Trace	6.5***
	Wilks' Lambda	6.5***
	Hotelling's Trace	6.5***
	Roy's Largest Root	6.5***
Environmental practice	Pillai's Trace	1.5
	Wilks' Lambda	1.5
	Hotelling's Trace	1.5
	Roy's Largest Root	1.5

\*\*\* $p < .001$ .

**Table 2.** Univariate analysis (ANOVA): Influence of hotel brand and environmental practice (EP) on attitudes towards the advertisement, brand image, and advertising effectiveness ( $N = 237$ )

Communication effectiveness measures	Hilton (mean value)		Ibis (mean value)			Total (mean value)			F value		
	ES	NSC	total	ES	NSC	total	ES	NSC	Hotel	EP	Hotel*EP
AAd	3.81	3.72	3.77	3.90	3.54	3.72	3.85	3.63	0.11	2.25	0.87
BI	4.32	4.07	4.20	3.76	3.63	3.69	4.04	3.85	13.69***	1.91	0.19
AE	3.26	3.07	3.16	3.19	3.01	3.10	3.23	3.04	0.45	4.32*	0.00

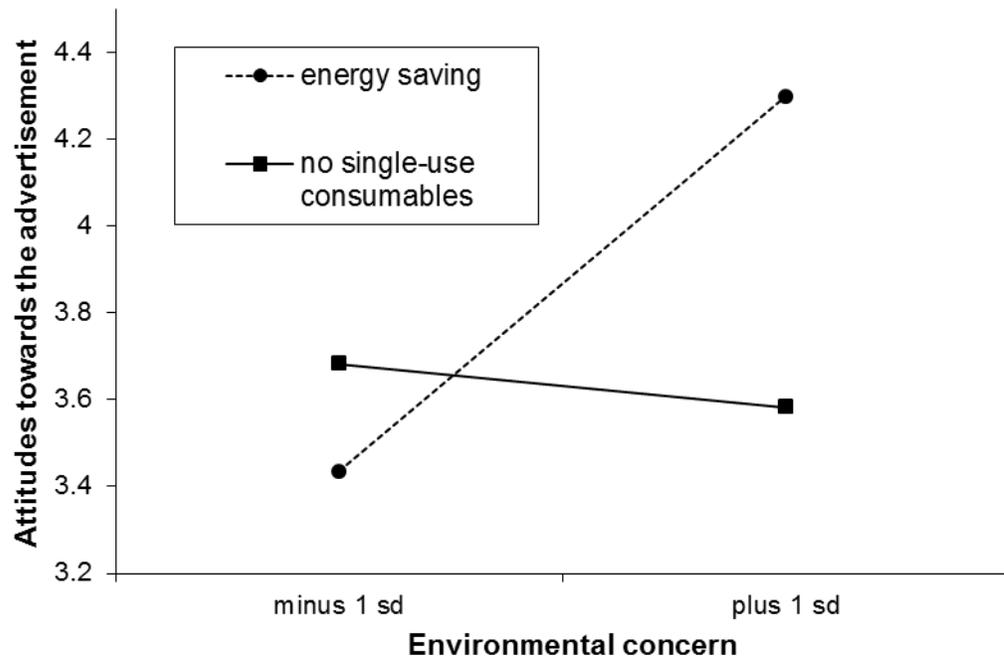
*Note.* EP = environmental practice; ES = energy-saving consumables; NSC = no single-use consumables; AAd = attitude towards the advertisement; BI = attitude towards the brand image; AE = attitude towards the advertising effect. AAd and BI were measured using 7-point scale while AE was measured using a 5-point scale with higher values indicating more positive responses. \* $p < .05$ . \*\*\* $p < .001$ .

**Table 3.** Influence of participants' environmental concern (EC), hotel brand, and environmental practice (EP) on attitudes towards the advertisement, brand image, and advertising effectiveness ( $N = 237$ )

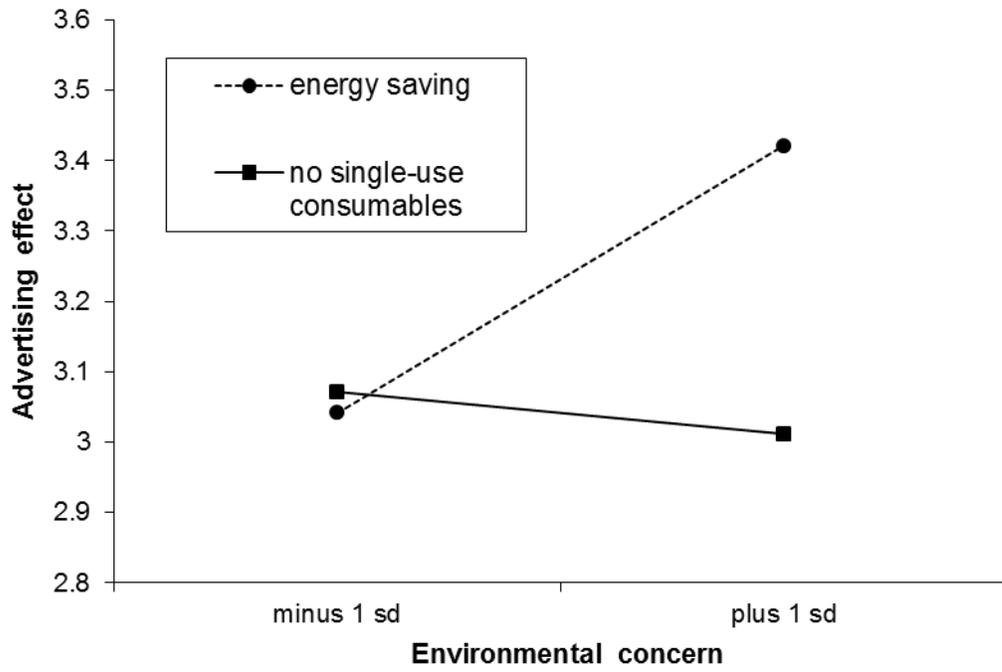
Predictor	<u>AAd</u>		<u>Step 2</u>		<u>BI</u>		<u>Step 2</u>		<u>AE</u>		<u>Step 2</u>	
	<u>Step 1</u>				<u>Step 1</u>				<u>Step 1</u>			
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
EC	0.13	1.98*	0.17	2.63**	0.09	1.41	0.10	1.57	0.08	1.30	0.11	1.78
Hotel	-0.01	-0.21	-0.02	-0.026	-0.23	-3.63***	-0.23	-3.64***	-0.04	-0.59	-0.04	-0.64
EP	-0.10	-1.58	-0.10	-1.64	-0.09	-1.44	-0.09	-1.44	-0.14	-2.13*	-0.14	-2.17*
EC X Hotel			-0.01	-0.17			-0.00	-0.06			-0.01	-0.17
EC X EP			-0.21	-3.30**			-0.06	-0.95			-0.16	-2.48*
R <sup>2</sup>	0.03		0.07		0.07		0.08		0.03		0.05	
$\Delta R^2$	0.03		0.04		0.07		0.00		0.03		0.03	

*Note.* EC = environmental concern; EP = environmental practice; ES = energy-saving consumables; NSC = no single-use consumables; AAd = attitude towards the advertisement; BI = attitude towards the brand image; AE = attitude towards the advertising effect. Hotel: Hilton = 0, Ibis = 1. Environmental practice: energy saving = 0, no single-use consumables = 1.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



**Figure 1.** Relationship between environmental concern and attitudes towards the advertisement as a function of environmental practice.



**Figure 2.** Relationship between environmental concern and advertising effect as a function of environmental practice.