

## **A Comparative Analysis of Consumers' Attitude and Behavior toward Green Practices**

**Wen-Jung Chen<sup>1\*</sup>**

<sup>1</sup>Hospitality Management Department, De Lin Institute of Technology, Taiwan

\*Correspondence: Wen-Jung Chen, No. 1, Lane 380, Qingyun Rd., Tucheng Dist, New Taipei City, 236 Taiwan, R.O.C. Tel: 886-2-2273-3567 #369. E-mail: [eileen515@seed.net.tw](mailto:eileen515@seed.net.tw)

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### **Abstract**

The present study suggests that national culture will influence consumer attitude and behavior; however, research documenting differences in consumer culture in Taiwan and China is lacking. This study analyzes the hotel industry of Taiwan and China and explores the relationships between environmental attitudes, environmental responsive behavior and the willingness to stay at environmentally friendly hotels. In addition, it also discusses whether there are differences between consumers from Taiwan and China. From the responses to a questionnaire from 600 and 656 hotel guests in Taiwan and China, respectively, it was determined that environmental attitudes affected the environmental responsive behavior and willingness to stay at environmentally friendly hotels and that environmental responsive behavior only affected Taiwanese consumers' willingness to stay at environmentally friendly hotels. The study also found significant differences in the environmental attitudes, environmental responsive behavior and willingness to stay at environmentally friendly hotels of consumers in Taiwan and China.

**Keywords:** environmental attitudes, environmental responsive behavior, green practices, hospitality industry, comparative analysis

### **1. Introduction**

The tourism industry has experienced significant growth in Taiwan and China. However, this growth has been accompanied by increased energy usage and pollution (Lim & McAleer, 2002). The concept of environmentally friendly hotels was developed several years ago in Europe and the U.S. (Kang, Stein, Heo, & Lee, 2012). In recent years, the Taiwanese government has promoted the development and implementation of an environmental protection scheme in the hotel industry in addition to establishing an informational website on eco-friendly practices (Hsieh, 2012). An increasing number of consumers prefer to visit tourist destinations that promote environmental protection, and these tourists also choose to purchase eco-friendly products and services (Han, Hsu, & Lee, 2009), including those provided by hotels (Han, Hsu, & Sheu, 2010). Therefore, environmental protection and conservation have become important to the hotel industry from the perspective of government, consumers and the industry itself. In China, rapid economic development has caused environmental pollution and destruction. As a result, the government, industry and consumers are highly concerned about environmental conservation. Gu and Ryan (2011) interviewed 257 executives working in China's hotel industry and found that, in recent years, the industry has developed a high level of concern for social responsibility and environmental

conservation. These executives thought that the hotel industry should actively implement ecologically responsible initiatives.

Nevertheless, some hoteliers are still resistant to “greening behavior” such as investing in environmental protection initiatives and introducing environmental protection measures. These companies believe that these initiatives require considerable capital investment; they do not bring any significant financial benefit to the hotel (Kang *et al.*, 2012). Furthermore, some scholars have found consumers to be ambiguous about purchasing environmentally friendly products (Han *et al.*, 2010; Manaktola & Jauhari, 2007).

National culture has a significant influence on consumer behavior. In a study on hotel industry of China, Miao, Adler, and Xu (2011) found that the different employees and customers from various countries with different tastes and concerns. Due to cultural differences, substantial differences may exist between the behavior of Taiwanese and Chinese consumers, and these potential differences have become increasingly important. However, little research has been conducted on this subject. The present study analyzes the hotel industry of Taiwan and China using a questionnaire. It explores the relationship between the customers’ environmental attitudes, environmental responsive behaviors and willingness to stay at environmentally friendly hotels. It also determines the degree of difference between consumer behavior in Taiwan and China in reference to the above preferences. The research provides useful practical advice and theoretical support related to the benefit of eco-friendly hotels to natural resources and analyzes consumer behavior in both Taiwan and China.

## **2. Literature Review**

### **2.1 Environmental Attitudes**

The program behavior theory proposed by Ajzen (1991) identifies attitude as the most important factor influencing individual behavioral intention. Attitude refers to an individual’s favorable or unfavorable assessment of a particular behavior. Hines, Hungerford, and Tomera (1987) defined environmental attitude as an individual’s attitude toward the environment and environment-related elements. In other words, environmental attitude is a psychological reaction to the environment shown by individuals, and it affects the behavior of the individual.

With the increasing profile of environmental issues, more research is being conducted on consumer’s environmental attitudes and behaviors. Most of this research is questionnaire-based, especially given Dunlap and Van Liere’s introduction of growth limits, natural balance and anti-anthropocentrism in 1978 – a new environmental paradigm scale that is widely used by scholars (Stern, Dietz, & Guagnano, 1995). The complex environmental issues that characterized the 1990s – including the deterioration of the ozone layer, waste, biodiversity and global environmental changes – led Dunlap, Van Liere, Mertig, and Jones (2000) to develop a new ecological paradigm (NEP) scale based on the environmental paradigm scale, ecological crisis and other related issues. The new ecological paradigm scale consists of the following five dimensions: limited growth, anti-anthropocentrism, fragile natural balance, anti-exemptionalism and the possibility of ecological crisis. The scale was used to measure the cognitive and emotional tendencies of the respondents on environmental issues in this study.

### **2.2 Environmental Responsive Behavior**

Monroe (2003) defined environmental responsive behavior as a set of environmentally responsible citizen behaviors that include querying information, decision making and internalizing ethical standards. As more people become aware of the serious impacts related to the destruction of the environment and natural resources, more people will show environmentally friendly behaviors (Han

*et al.*, 2010), including environmentally friendly purchasing behavior (e.g., not buying disposable products), supporting policies favorable to the environment (Stern, 2000) and incorporating environmentally friendly behavior patterns into their daily life (e.g., participation in recycling activities). These consumers will sacrifice convenience and accept products with fewer functions if these products are more environmentally friendly, and they would even be willing to pay an additional fee for environmentally friendly products (Manaktola & Jauhari, 2007).

### **2.3 Environmental Attitudes and Environmental Responsive Behavior**

The social psychological theory proposed by Fishbein and Ajzen (1975) indicated that attitude is an effective predictor of behavior and intentions. Ryu, Lee, and Kim (2012) and Ryu, Han, and Jang (2010) studied restaurant customers in USA, and found that customers' attitude is indeed a significant determinant of behavior. Many scholars studied different ethnic groups to explore the relationship between environmental attitudes and environmental responsive behaviors (e.g., DeChano, 2006; Slimak & Dietz, 2006). Mobley, Vagias, and DeWard (2010) explored the impact of education and environmental attitude on individuals' environmental responsive behavior and found that both factors significantly influenced environmental responsive behavior and that environmental attitudes had a stronger influence on personal environmental responsive behavior than education. Based on the above theoretical rationale and the findings of the previous research, the following is hypothesized:

**H1.** The more positive the environmental attitudes of consumers, the higher the degree of environmental responsive behavior they will show.

### **2.4 Environmental Attitudes and Willingness to Stay at Green Hotels**

Both of Social identity theory (Tajfel & Turner, 1986) and means-end theory (Gutman, 1982) emphasize the importance of personal beliefs and values in the decision-making process. Social identity theory explains how individuals form a sense of belonging to a group and proposes that individuals construct their self-identity from a symbol of an organization that matches their self-esteem and is lasting and different (Bhattacharya & Sen, 2004). Means-end theory proposes that consumers will decide to purchase certain products or services to match their personal values (Huber, Herrmann, & Morgan, 2001). In this sense, customers with positive environmental attitudes will positively evaluate green products or measures, thereby increasing their willingness to purchase them (Kang *et al.*, 2012).

Some scholars have researched these subjects in the context of the hospitality industry. Dutta, Umashankar, Choi, and Parsa (2008) studied restaurant customers in the U.S. and India and found that Americans with environmental concerns were more willing to buy green products. Kang *et al.* (2012) and Han, Hsu, Lee, and Sheu (2011) conducted research on U.S. hotels to explore the relationship between consumer attitudes towards the environment and found that when consumers had a positive environment attitude, their willingness to stay at green hotels increased. Interestingly, Han *et al.* (2011) also found that female consumers and guest who had previously stayed at "green hotels" were more willing to stay at an environmentally friendly hotel. However, Manaktola and Jauhari (2007) explored the consumer's intentions to pay for green practices in the lodging industry in India, and found that they are conscious about environmentally friendly practices and prefer to use lodging that follows these practices, but they are not willing to pay extra for these green practices. As such, the following is hypothesized:

**H2.** The more positive the environmental attitudes of consumers, the higher their willingness to stay at green hotels.

### **2.5 Environmental Responsive Behavior and Willingness to Stay at Green Hotels**

Surprisingly, several scholars have proposed a negative relationship between consumers'

environmental responsive behavior and their willingness to purchase environmentally friendly products. For example, some consumers believe that environmental protection is very important and would like to display environmentally conscious behavior, but they also want to preserve their lifestyle (McDaniel & Rylander, 1993). These consumers are unwilling to sacrifice convenience (Stern, 1999) and accept environmentally friendly products with less functionality, let alone pay an additional fee for environmentally friendly products (Peattie, 1999). Han *et al.* (2010) studied the U.S. hotel industry to explore the application of plan-type behavioral theory to consumers' willingness to stay at environmentally friendly hotels and to determine whether environmental responsive behavior would affect their willingness to stay at environmentally friendly hotels. They found that consumer attitudes, subjective norms and cognitive behavioral control had a positive impact on consumers' willingness to stay at a "green" hotel, although the customers' environmental responsive behavior did not have a significant influence on their willingness to stay at environmentally friendly hotels. Therefore, this study proposes the following hypothesis:

**H3.** Consumers' environmental responsive behavior does not have a significant impact on their willingness to stay at environmentally friendly hotels.

### **3. Methodology**

#### **3.1 Questionnaire Development**

The present study adopted a questionnaire methodology. In the present study, 15 questions were developed based on the study by Dunlap *et al.* (2000), and environmental attitudes were separated into five dimensions: limited growth, anti-anthropocentrism, fragile natural balance, anti-exemptionalism and the possibility of ecological crisis. The scale items like "the Earth is like a spaceship in which space and resources are very limited", "humans have the right to alter the natural environment to meet their needs", "human disturbance to natural ecosystems often causes severe disasters". Additionally, 14 questions were based on the environmental responsive behavior scale of Mobley *et al.* (2010), and 3 questions were based on the environmental accommodation preference scale of Han *et al.* (2009). In this study, a Likert-type five-point scale was used to measure respondents' extent of agreement: strongly disagree, disagree, neutral, agree and strongly agree. In the final section of the questionnaire, respondents were asked to provide the following basic personal information, including gender, age and other demographic information. Prior to use with study participants, the initial questionnaire was examined by five scholars and practitioners for validity, and unsuitable questions were either discarded or corrected.

#### **3.2 Sample and Data Collection**

The subjects of this study were tourists that stayed at hotels in Taiwan and southern China. The survey was conducted between December 2013 and March 2014. In Taiwan, a total of 800 copies of the questionnaire were distributed, of these 624 copies were returned, 24 surveys had more than five unanswered questions, and these surveys were omitted; thus, there were a total of 600 valid questionnaires (effective rate 75%). In southern China, a total of 800 copies of questionnaire were distributed, of these 685 questionnaires were returned, 29 questionnaires had more than five unanswered questions, and these surveys were omitted; thus, there were a total of 656 valid questionnaires (effective rate 82%).

#### **3.3 Analysis**

In this study, factor analysis, correlation analysis, analysis of variance and regression analysis were used to understand the relationship between the consumers' environmental attitudes, environmental responsive behavior and willingness to stay at environmentally friendly hotels. In addition, differences in cognitive variables between consumers in Taiwan and China were studied to verify

the validity of our hypotheses.

## 4. Results

### 4.1 Respondents' Profile

Women accounted for 65.9% of the 600 respondents in Taiwan, with a modal age of 25-35 years (54.2%). The majority of respondents had a university education (66.8%), 69.9% were single, many worked in the commercial sector (40.3%) or information technology professionals (27.6%) and the average personal monthly income was NT \$ 3-5 million (55.7%). Of these respondents, 46.8% lived in the northern region of Taiwan.

Women accounted for 56.9% of the 656 respondents in China, and the modal age was 31-45 years (58.7%). Most respondents had a university education (47.2%) and were single (52.5%), and the majority worked in the technology industry (42.6%). The majority of respondents had an average personal monthly income of RMB 3500-4000 Yuan (51.9%).

### 4.2 Descriptive Statistics and Confirmatory Factor Analyses

Following the procedures described in Churchill Jr. (1979) and Gerbing and Anderson (1988), the questionnaire was analyzed using confirmatory factor analysis to examine the reliability and validity of the variable measurements, and the results are shown in Table 1. The following overall model fit statistics were found for respondents from Taiwan:  $\chi^2 = 189.29$ , root mean square error of approximation (RMSEA) = 0.05, standardized root mean square residual (SRMR) = 0.06, goodness-of-fit index (GFI) = 0.93, adjusted GFI (AGFI) = 0.89, and comparative fit index (CFI) = 0.95; standardized factor loadings ranged from 0.66-0.91. For China respondents, the following overall model fit statistics were found:  $\chi^2 = 211.52$ , RMSEA = 0.05, SRMR = 0.05, GFI = 0.95, AGFI = 0.93 and CFI = 0.98; standardized factor loadings ranged from 0.68-0.95. These results showed a good overall model fit. Regarding the reliability analysis, for Taiwan respondents, the research variables yielded squared multiple correlation (SMC) values ranging from 0.61-0.87 and composite reliability (CR) values ranging from 0.78-0.91. For China respondents, the research variables yielded SMC values ranging from 0.52-0.89 and CR values ranging from 0.79-0.95. These results corresponded to the standards of SMC > 0.50 and CR > 0.70 (Ok, Back, & Shanklin, 2005), showing that each of the variables were internally consistent.

In the validity analysis, for Taiwan respondents, the average variance extracted (AVE) ranged from 0.55-0.86. For China respondents, the AVE ranged from 0.70-0.87. These results were in line with the standards of factor loadings > 0.50, SMC > 0.50, CR > 0.70 and AVE > 0.50 (Ok *et al.*, 2005), indicating adequate convergent validity of the results. Furthermore, we found that the AVE square root value of the research variables was greater than the correlation coefficient between the various dimensions, as shown in Table 2. These results were in line with the standards of Kim, Oh, and Gregoire, (2006), therefore, the model and its results had good differentiating validity.

Descriptive statistics and the analysis of the data from Taiwan suggest that the average of the variable dimensions ranged from 3.60-4.40, with a standard deviation ranging from 0.50-0.65. The coefficient of skewness and kurtosis for the variables were not significant, and the data were normally distributed. In regard to environmental attitudes, "believe in limited growth" dimensions had the highest average score and "anti-exemptionalism" had the lowest average score. Analysis of the data from the China respondents showed that the average of the dimensions of the study variables was between 3.81-4.31 and that the standard deviation ranged between 0.48-0.69. The coefficient of skewness and kurtosis coefficient were not significant for these data, and the data were normally distributed. The "anti-anthropocentrism" dimensions had the highest average score among all environmental attitudes, and the "believe in limited growth" dimensions had the lowest



average score.

### 4.3 Correlation Analysis

In this study, correlation analysis was used to understand the linear relationship between the research variables and their dimensions. Through analyzing the information from the respondents in Taiwan, we found that environmental attitudes, environmental responsive behavior and willingness to stay showed a significant positive correlation. Analysis of the various dimensions of environmental attitudes and environmental responsive behavior showed a significant positive correlation. The “fragile natural balance” dimensions had the highest correlation with environmental responsive behavior, whereas the “anti-anthropocentrism” dimensions had the lowest correlation with environmental responsive behavior. The analysis of each aspect of the environmental attitudes and accommodation choice suggested that only “believe in limited growth”, “fragile natural balance” and “the possibility of ecological crisis” dimensions showed significant positive correlation with accommodation choice, and the “believe in limited growth” dimensions had the highest correlation with accommodation choices.

The analysis of the data from the China respondents showed that environmental attitudes had a significant positive correlation with accommodation choices, and no significant relationship was found between environmental responsive behavior and accommodation choice. The analysis of each aspect of the environmental attitudes and environmental responsive behavior suggested that only the “anti-exemptionalism” dimension and environmental responsive behavior showed a significant positive correlation. The analysis of the various dimensions of environmental attitudes with accommodation choice indicated that only the “believe in limited growth” and “the possibility of ecological crisis” dimensions showed a significant positive correlation with accommodation choice, and the “believe in limited growth” dimension had the highest correlation with accommodation choice.

### 4.4 Hypothesis Testing

This study found that environmental attitudes and environmental responsive behavior had a significant positive correlation with accommodation choice; therefore, a hierarchical regression analysis was used to understand the impact of the three study variables. Through analyzing the information from the respondents in Taiwan, we found that age ( $F = 4.88$ ,  $p = 0.00$ ), marriage ( $F = 4.46$ ,  $p = 0.01$ ), area of residence ( $F = 3.11$ ,  $p = 0.02$ ) significantly affected the environmental responsive behavior, and the  $\eta$  squared coefficients were greater than .06. Therefore, this study used these as control variables in the hierarchical regression analysis to determine the explanatory power of environmental attitudes on environmental responsive behavior. The explanatory power of the area of residence on environmental responsive behavior ( $Beta = -0.18$ ,  $t = -3.57$ ,  $p = 0.00$ ) was greater than other basic personal information, indicating that the respondents living in the northern region of Taiwan displayed stronger environmental responsive behaviors. After controlling for age, marital status, and area of residence, the “believe in limited growth” ( $Beta = 0.17$ ,  $t = 3.08$ ,  $p = 0.00$ ) and “fragile natural balance” dimensions ( $Beta = 0.16$ ,  $t = 2.81$ ,  $p = 0.01$ ) were significant predictors of environmental responsive behavior.

Through analyzing the information from the respondents in China, we found that demographic variables did not significantly influence environmental responsive behavior. Therefore, the demographic variables were not used as control variables in the regression analysis. Environmental attitudes such as “anti-exemptionalism” ( $Beta = 0.13$ ,  $t = 2.53$ ,  $p = 0.01$ ) and “the possibility of ecological crisis” ( $Beta = 0.11$ ,  $t = 2.06$ ,  $p = 0.04$ ) were significant predictors of environmental responsive behavior. Therefore, the research hypothesis 1 (“the more positive the environmental attitudes of consumers, the higher the degree of environmental responsive behavior they will show”) was supported.

Through analyzing the information from the respondents in Taiwan, we found that age ( $F = 3.12$ ,  $p = 0.02$ ), average monthly income ( $F = 3.42$ ,  $p = 0.01$ ) significantly influenced the willingness to stay in an environmentally friendly hotel, and the  $\eta$  squared coefficient was greater than 0.06. Therefore, this study used these as control variables for the hierarchical regression analysis to investigate the explanatory power of the influence of environmental attitudes and environmental responsive behavior on accommodation choices. The results of this analysis are shown in Table 1. Age had the highest explanatory power in terms of accommodation choice ( $Beta = 0.13$ ,  $t = 2.33$ ,  $p = 0.02$ ) among all the basic personal data, indicating that older respondents had a higher willingness to stay at environmentally friendly hotels. After adjusting the influence of age and personal monthly income variable, only the “believe in limited growth” dimension ( $Beta = 0.19$ ,  $t = 3.38$ ,  $p = 0.00$ ) was a significant predictor of accommodation choice. After controlling for age, personal monthly income and the environmental attitude dimension “believe in limited growth”, the environmental responsive behavior variable ( $Beta = 0.41$ ,  $t = 8.49$ ,  $p = 0.00$ ) became a significant predictor of accommodation choice.

**Table 1.** Class regression analysis of the influence of environmental attitudes and environmental responsive behavior on accommodation choice (Taiwan respondents)

Variables	Class 1			Class 2			Class 3		
	<u>Personal basic information variables</u>			<u>Environmental attitude variables</u>			<u>Environmental responsive behavior variables</u>		
	Beta	t	P	Beta	t	P	Beta	t	P
Age	.13	2.33	.02	.15	2.66	.01	.11	2.12	.03
Monthly income	-.07	-1.16	.25	-.08	-1.47	.14	-.09	-1.76	.08
Independent variables	Believe in limited growth			.19	3.38	.00	.12	2.26	.03
	Anti-anthropocentrism			.01	.22	.83	.03	.58	.56
	Fragile natural balance			.04	.69	.49	-.03	-.57	.57
	Anti-exemptionalism			-.02	-.33	.74	-.05	-1.06	.29
	The possibility of ecological crisis			.03	.51	.61	.02	.41	.68
	Environmental responsive behavior						.41	8.49	.00
	summary	R square	.014		.065			.215	
F		2.72		3.75			12.91		
p		.07		.00			.00		
$\Delta R$ Square		.014		.051			.150		
$\Delta F$		1.66		172.23			10.28		
$\Delta p$		.18		.00			.00		

Through analyzing the information from the respondents in China, we found that age ( $F = 7.71$ ,  $p = 0.00$ ), level of education ( $F = 5.47$ ,  $p = 0.00$ ), average monthly income ( $F = 12.37$ ,  $p = 0.00$ ) significantly affected the willingness to stay in an environmentally friendly hotel. All  $\eta$  squared coefficients were greater than 0.06. Therefore, this study used these variables as controls in the hierarchical regression analysis to explore the explanatory power of environmental attitudes and environmental responsive behavior on accommodation choice. The results are shown in Table 2. Among all basic personal information, personal monthly income had the highest explanatory power in relationship to accommodation choice ( $Beta = 0.18$ ,  $t = 3.26$ ,  $p = 0.00$ ), indicating that respondents with a higher monthly income had a higher willingness to stay at environmentally friendly hotels. After controlling for the influence of age, education level and average monthly income (except for

“anti-anthropocentrism” dimensions), other environmental attitude dimensions had a significant explanatory power on accommodation choice. After controlling for the influence of age, education level, average monthly income, and the environmental attitude dimension, environmental responsive behavior was not a significant predictor of accommodation choice. Therefore, research hypothesis 2 (“the more positive the environmental attitudes of consumers, the higher their willingness to stay at green hotels”) was supported, but hypothesis 3 (“consumers’ environmental responsive behavior has no significant impact on their willingness to stay at environmentally friendly hotels”) because of Taiwan’s sample was not supported.

**Table 2.** Regression analysis of the influence of environmental attitudes and environmental responsive behavior on accommodation choice (China respondents)

Variables	Class 1			Class 2			Class 3			
	<u>Personal basic information variables</u>			<u>Environmental attitude variables</u>			<u>Environmental responsive behavior variables</u>			
	Beta	t	P	Beta	t	P	Beta	t	P	
age	.15	1.83	.07	.10	1.27	.21	.10	1.29	.20	
Level of education	.02	.22	.83	.08	1.00	.32	.08	.96	.34	
Monthly income	.18	3.26	.00	.12	2.12	.04	.12	2.12	.04	
Independent variables	Believe in limited growth			.17	3.44	.00	.17	3.44	.00	
	Anti-anthropocentrism			.08	1.53	.13	.08	1.52	.13	
	Fragile natural balance			.11	2.24	.03	.11	2.22	.03	
	Anti-exemptionalism			.10	2.06	.04	.11	2.08	.04	
	The possibility of ecological crisis			.13	2.69	.01	.13	2.70	.01	
	Environmental responsive behavior						-.01	-.29	.77	
	summary	R Square	.084			.15			.17	
F		8.62			7.23			6.50		
p		.00			.00			.00		
ΔR Square		.084			.066			.02		
ΔF		1.66			172.23			10.28		
Δp		.18			.00			.00		

#### 4.5 Analysis of Differences between Consumers in Taiwan and China

In this study, a one-way ANOVA analysis was used to determine if there were significant differences in the environmental attitudes, environmental responsive behavior and willingness to stay at environmentally friendly hotels between consumers in Taiwan and China. The overall test results indicate that consumers in Taiwan and China had significantly different environmental attitudes ( $F = 474.50$ ,  $p = 0.00$ ), environmental responsive behavior ( $F = 206.74$ ,  $p = 0.00$ ) and willingness to stay ( $F = 214.37$ ,  $p = 0.00$ ), and the five dimensions of environmental attitudes were also significantly different ( $p = 0.00$ ).

## 5. Discussion

The present study analyzed the hotel industry in Taiwan and China and explored the relationship between consumers’ environmental attitudes, environmental responsive behavior and willingness to stay at environmentally friendly hotels. Consumers in Taiwan were found to have more positive



environmental attitudes, more environmentally conscious behaviors and a higher willingness to stay at environmentally friendly hotels. In addition, environmental responsive behavior was also found to positively affect consumers' willingness to stay at environmentally friendly hotels. Conversely, the present study found that for consumers in China, there was no significant relationship between environmental responsive behavior and the willingness to stay at environmentally friendly hotels. Therefore, hypothesis 1 and hypothesis 2 were supported. However, hypothesis 3 was not supported, confirming the results of other studies of the hotel industry (such as Manaktola & Jauhari, 2007; Han *et al.*, 2010). Scholars have found that even if consumers thought that environmental protection was very important and were willing to display environmentally friendly behavior, they would not do so when they had to sacrifice convenience, spend more money to buy environmentally friendly products or services or select environmentally friendly projects with fewer features (McDaniel & Rylander, 1993; Stern, 1999; Peattie, 1999). These results may reflect the fact that the target respondents in this study were 25-35 years of age; that is, they were younger consumers with a college degree who were aware of environmental and "green" issues. Hence, they had a high degree of environmental awareness.

National culture affects consumer culture and consumer behavior (Miao *et al.*, 2011). Therefore, this study explored whether there were significant differences between consumers in Taiwan and China in regard to their environmental attitudes, environmental responsive behavior and their willingness to stay at environmentally friendly hotels. There were four significant differences among the study results. First, although environmental attitudes affected both the consumer behavior and willingness to stay at environmentally friendly hotels in Taiwan and China, the attitude factors among these consumers were different. For consumers in Taiwan, "believe in limited growth" and "fragile natural balance" affected their environmental responsive behavior, and "believe in limited growth" also affected their willingness to stay at environmentally friendly hotels. However, for consumers in China, "anti-exemptionalism" and "the possibility of ecological crisis" affected their environmental responsive behavior, and with the exception of the "anti-anthropocentrism" attitude, the four other attitude factors affected their willingness to stay at environmentally friendly hotels. Second, for consumers in Taiwan, environmental responsive behavior affected their willingness to stay at environmentally friendly hotels, whereas no such correlation was found for consumers in China. Third, different demographic variables had different effects on the environmental responsive behavior and willingness to stay at environmentally friendly hotels. For consumers in Taiwan, the area of residence affected their environmental responsive behavior, and age affected their willingness to stay at environmentally friendly hotels. This study found that consumers living in northern Taiwan demonstrated a higher degree of the environmentally friendly behavior, and older consumers had a higher willingness to stay at environmentally friendly hotels. Conversely, for consumers in China, none of the demographic variables affected their environmental responsive behavior, and personal monthly income affected their willingness to stay at environmentally friendly hotels. This indicates that consumers in China with higher monthly incomes had a higher willingness to stay at environmentally friendly hotels. Finally, significantly different results were found in regard to the five dimensions of environmental attitudes, environmental responsive behavior and willingness to stay at environmentally friendly hotels for consumers in Taiwan and China. The study also found that age was an important factor that affected the willingness to stay at environmentally friendly hotels. Furthermore, the results also showed that consumers in China had higher degree of willingness to stay at green hotels than consumers in Taiwan, and this is a phenomenon that hoteliers need to internalize when trying to enter or develop the market of China.

## 6. Conclusions

This study provides some practical advice for the hotel industry. First of all, the environmental

attitude of “believe in limited growth”, environmental responsive behavior and the age of guests can be treated as market segmentation variables when planning conservation strategies in the hotel industry. The industry can conduct surveys of consumers’ environmental attitudes and implement behavioral observation techniques. In this way, potential customers with a high willingness to stay at environmentally friendly hotels can be identified, and this procedure can facilitate the planning of an attractive marketing strategy and market positioning. Second, environmental attitudes and personal monthly income can be used as market segmentation variables for hoteliers developing an environmental strategy and planning to enter the market of China, and we recommend that environmental attitudes surveys be conducted. Because the gap between high- and low-income consumers in China is huge, it is necessary to clarify the relationship between the economic power of consumers and their willingness to pay to facilitate the planning of marketing strategy and pricing strategy. Third, this study found that environmental attitudes are a significant determinant of a consumer’s willingness to stay at environmentally friendly hotels. Therefore, it is recommended that the hotel industry use advertising and public service activities, as well as cooperate with schools and governments to strengthen the public’s interest in and positive attitude toward environmental conservation. As a result, consumers will accept the hotel’s environmental measures and will be likely to pay more for environmental conservation measures.

This study has several limitations and contains several recommendations for future research. First, this study only explored the environmental attitudes, environmental responsive behavior, willingness to stay at environmentally friendly hotels and differences between consumers in Taiwan and China. However, the controlling factors were not discussed in detail. In particular, this study found that consumers from northern Taiwan had a higher degree of awareness of environmental responsive behaviors, and therefore, it is recommended that future research discuss differences in national and regional culture. Second, respondents in the Taiwan data set were mostly young people aged 25-35 years, and respondents from China were mostly from southern China. Thus, results of this study may be more difficult to apply to the other groups. A more extensive investigation of different demographic characteristics is recommended, especially for areas with large wealth disparities and for a larger area of China. The scope of the respondents should be expanded to improve the objectivity of the study. Finally, this analysis should be extended to other industries, as environmental issues are relevant to many industries. It is thus recommended that the results of this study can be used in the future for other service-based industries such as catering.

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