

People's motivation, constraints and willingness to pay for green hotels

Li-Hui Chang^{1*}, Yu-Chen Hsiao², Guych Nuryyev³ and Mei-Ling Huang⁴

Received: 19/12/2013 Accepted: 24/04/2014

¹ Associate Professor, Department of Tourism Management, National Quemoy University, 1, University Rd., Jinning Township, Kinmen 89250, Taiwan, Phone: +886 935455066, Email: lisali@nqu.edu.tw

² Assistant Professor, Department of Sport Information and Communication, National Taiwan University of Physical Education and Sport, 52-16, Sec. 2, Syuefu Rd., Puzih City, Chiayi County 61363, Taiwan, Phone: +886 933359178, Email: anna.hsiao226@gmail.com

³ Assistant Professor, International Finance Department, I-Shou University, Kaohsiung, Taiwan, E-mail: gnuriyev@isu.edu.tw

⁴ M.S. candidate, School of Tourism Development, Maejo University, Sansai, Chiang Mai, Thailand, Phone: +886 989-791-223, E-mail: daphne.1983@hotmail.com

* Corresponding author

Abstract

The purpose of this study is to examine the relationships among visitors' demographics, motivations, constraints and willingness to stay in green hotels in Taiwan. The data, consisting of 461 usable questionnaires, were collected from the following green hotels in Taiwan: Hotel Royal Chihpen in Taitung County, Hotel Color in New Taipei City, and Guey Lin Hotel in Taoyuan County. Four hypotheses were developed regarding the effects demographics on motivation and constraints, as well as the effect of the latter two on willingness to pay. The results indicate that demographics are correlated with the visitors' motivation and constraints, which in turn affect their willingness to pay for green hotels.

© 2015 International University College. All rights reserved

Keywords: green hotel; motivation; constraint; willingness to pay

Citation: Chang, L., Hsiao, Y., Nuryyev, G. and Huang, M. (2015) People's motivation, constraints and willingness to pay for green hotels. *European Journal of Tourism Research* 9, pp. 67-77

Introduction

According to the Green Hotels Association (2014), green hotels are eco-friendly lodging properties that implement a number of programmes designed to protect the environment, such as conserving water and energy, reducing solid waste, recycling durable

items (e.g. bins, towels), limiting disposable supplies, etc. Such eco-friendly operation of a hotel can be beneficial both for the environment and the hotel, as it decreases the firms resource and energy intensity, which in turn may increase its operating revenue (Manaktola and Jauhari, 2007; Han and Kim, 2010). Often

eco-friendly practices are combined with other activities of corporate social responsibility, such as educating the staff on the importance of preserving the environment, donating materials to charities, etc.

During the recent years, public concern for the environment has become more prominent, with many people recognising the seriousness of environmental problems. This concern has also spilled into the tourism industry. According to the UNEP and UNWTO, the hotel industry is responsible for about 21% of all CO₂ emissions related to tourism (UNEP and UNWTO, 2012). Hence, concern for the environment has entered the consumers' choices in the marketplace (Kalafatis *et al.*, 1999; Kuneva, 2009; Accenture, 2012; Fotiadis, Vassiliadis, and Rekleitis, 2013; Vassiliadis, Fotiadis, & Piper, 2013). More and more customers prefer the services of environmentally responsible companies that meet customers' green requirements. This positively affects the customers' willingness to pay for eco-friendly services (Accenture, 2012). Consequently, going green is believed to be an effective competitive edge in the lodging market (Manaktola and Jauhari, 2007; Wolfe and Shanklin, 2001; Han *et al.*, 2009; Fotiadis, 2011; Fotiadis and Vassiliadis, 2010; Fotiadis, Vassiliadis, and Piper, 2013).

In addition for possible reduction of operating costs, and genuine care for the environment, other motivations exist for hotels to become green and for customers to pay for the services of green hotels. These include improved public image of the hotel (Lin *et al.*, 2007; Han *et al.*, 2009; Best and Thapa, 2013), social pressure and recommendations from the tourists' friends (Chen and Tung, 2014; Chen and Peng, 2012), ease of access (Han *et al.*, 2010; Chen and Tung, 2014), etc. However, tourists also face constraints to choosing green hotels; there include higher prices of the hotels' services (Dalton *et al.*, 2008; Han *et al.*, 2009; Kang *et al.*, 2012), which may require a larger income (Im *et al.*, 2003; Kang *et al.*, 2012), and lack/difficulty to access the information on green hotels (Han *et al.*, 2010). In addition to the motivation and constraints mentioned above, researched have shown that some other characteristics of tourists, such as age

(Im *et al.*, 2003; Han *et al.*, 2009) and gender (Han *et al.*, 2009), can also influence their intention to visit green hotels.

Hence, the literature would benefit considerably from a comprehensive study that would consider various demographic characteristics of tourists, their motivation, constraints, and willingness to pay for the services of green hotels. The current study includes this variety of factors and investigates the relationships among them. The authors also provided some suggestions on developing the industry.

Literature review

Several researchers consider the motivations of hotels to become green (e.g., Bohdanovicz, 2006; Lee and Park, 2009; Chou *et al.*, 2012), and they have found that the main motivations are reducing operating costs, promoting public image, and gaining a competitive advantage. Others scholars investigate the factors affecting the behaviour of the hotels' customers (e.g. Han *et al.*, 2011; Kang *et al.*, 2012; Chen and Tung, 2014), which is mainly affected by their attitude to environmental conservation, income, gender, and social pressure.

Importance of green hotels has been gaining significance in Taiwan as well as in other countries. Energy use intensity of international tourist hotels in Taiwan is generally lower than in some neighbouring countries such as Hong Kong or Singapore, but it is higher than in countries located in mild climates, such as New Zealand, Spain or Greece (Wang, 2012). Tsai *et al.* (2014) show that CO₂ emission in Taiwanese hotels increases in summer due to increased use of air conditioners. However, due to increased numbers of guests during the same time, average CO₂ emissions per person per night are highest in off peak season between October and February. In order to improve the hotels' energy efficiency, reduce CO₂ emissions and reduce resource intensity, Taiwanese Environmental Protection Administration established "Green Mark" as a certification system for eco-friendly hotels (and other businesses) in 1992 (TEPA, 2010).

However, besides establishing the Green Mark, additional motivation may be needed for hotel owners to implement environmental

management. Best and Thapa (2013) note, that the importance of conserving the natural resources may be apparent to hotel managers for a number of reasons. Firstly, tourism industry is often heavily dependent on local nature. Secondly, hotel managers are also residents in the local community, hence they are interested in preserving and enjoying the nature. The managers may even be motivated by their willingness to preserve the nature for future generations. Environmental management may also be beneficial for hotels as it can improve its public image, possibly increasing its customers base (Han *et al.*, 2010). This in turn, provides hotels with a competitive advantage and may serve as a significant motivation for environmental practices (Best and Thapa, 2013).

One of the strongest motivations for hotels to implement green practices is increasing their profits. On one hand, studies (Chan, 2008; Best and Thapa, 2013) show that lack of financial, labour and other managerial resources is one of the barriers for hoteliers to adoption of green practices. The workload of staff usually increases with introduction of environmental practices; the introduction also requires considerable investment of funds. On the other hand, green practices that involve conservation of energy, water, solid waste, and other resources can lead to reduced operating costs (hence, increased profits) (Bohdanowicz, 2006; Manaktola and Jauhari, 2007). Lee and Park (2009) show that activities of corporate social responsibility, including green practices, are positively correlated with hotels' profitability and value. Moreover, Molina-Azorin *et al.* (2009) show that degree of environmental proactivity of hotels can be positively correlated with their performance.

The first and obvious motivation for customers to stay in green hotels is their attitude towards doing so and their concern for the environment (Chen and Peng, 2012; Chen and Tung, 2014; Han *et al.*, 2009; Han *et al.*, 2010). Chen and Tung (2014) show that customers' attitude towards green hotels and their environmental concern are correlated. However, Longoni *et al.* (2014) show that the behaviour of customers who position themselves as environmentally concerned may be subject to the self-

completion theory. The theory states that once individuals have achieved their desired image (for example, an image of a green-minded person), they reduce the efforts of attaining / maintaining the targeted identity. In the work by Longoni *et al.* (2014), the group of individuals that was commended on their green practices, started to recycle less; while the group that was reprimanded, started to recycle more.

Customers' intention to visit green hotels also depends on their past behaviour. Both the satisfaction received from visiting green hotels in the past and the mere frequency of past visits, have an effect on customers' intentions. Obvious, having been satisfied with the service and other aspects of staying in a green hotel before, customers may revisit them (Kallbakken and Saelan, 2013; Han and Kim, 2010). Past visits per se (without the influence of the level of satisfaction) also have an effect on repeated visits, because the customers are aware of the opportunities to stay in green hotels and know what services and benefits are available there (Han and Kim, 2010; Han *et al.*, 2011). Related to your own past experience, is the past experience of others. Chen and Peng (2012) show that tourists that are not sure of what green hotels have to offer rely on recommendations of their acquaintances.

Another important factor that affects the intentions of customers to stay in green hotels is the price. As mentioned above, introduction of green practices may require considerable investments, which may lead to higher prices to customers. However, Masau and Prideaux (2003) show that environmentally concerned tourists may be willing to pay more for staying in green hotels: 66% of their respondents, who were overseas tourists in Kenya. A survey of tourists in the USA, UK and Australia shows that 70% are willing to pay up to USD 150 more for environmentally friendly services (IETS, 2006). Dalton *et al.* (2008) show that almost half of tourists interviewed in four hotels in Australia are willing to pay extra for green services. Among these, most opted to pay 1-5% extra, and a large share opted to pay 5-20% extra. Similarly, Han *et al.* (2009) also show that overall green image of a hotel induces some tourists to be willing to pay more for the services. However, some studies show

that majority of hotel guests are not willing to pay extra for environmentally friendly services (Watkins, 1994; Kasim, 2004). Of course, whether guests are willing to pay extra for environmental protection depends on a number of factors, such as their income (Han *et al.*, 2011; Kang *et al.*, 2012), the feeling of social pressure to be green, and even the ease of accessing green hotels (Chen and Tung, 2014; Han *et al.*, 2010).

The variety of factors influencing tourists' decisions to pay for the services of green hotels can be categorised as either motivational factors (attitude towards protecting the environment) or constraining factors (lack of information or money). Lindenberg and Steg (2007) further categorise the motivating factors using normative, hedonic, and gain goals. Normative factors motivate individuals to act appropriately; hedonic factors motivate individuals to act in order to feel better right now; and gain related factors motivate people to increase the amount of their resources. Kollmuss and Aageyman (2002) further categorise the constraints into individual (e.g.

laziness, lack of interest), responsibility related (e.g. lack of trust), and practicality related (e.g. lack of information, difficulty of access).

Theoretical Framework

As mentioned in the literature review section of this paper, scholars have shown that various personal characteristics, such as attitude towards green products, income, age, and even gender (Im *et al.*, 2003; Han *et al.*, 2009; Han *et al.*, 2010; Kang *et al.*, 2012) may affect the tourists' intentions to stay in green hotels. However, the effects of these as well as other demographic characteristics may not be direct. One collection of characteristics of the tourists may influence their willingness to pay for services of green hotels through affecting their motivation and constraints. Another collection of characteristics may be interpreted as being either motivating (e.g. positive attitude towards conserving the environment) or constraining (e.g. relatively low income) factors. Based on this notion, various factors affecting the tourists' willingness to pay for green hotels are divided into their demographic characteristics, motivating factors, or constraints. This raises

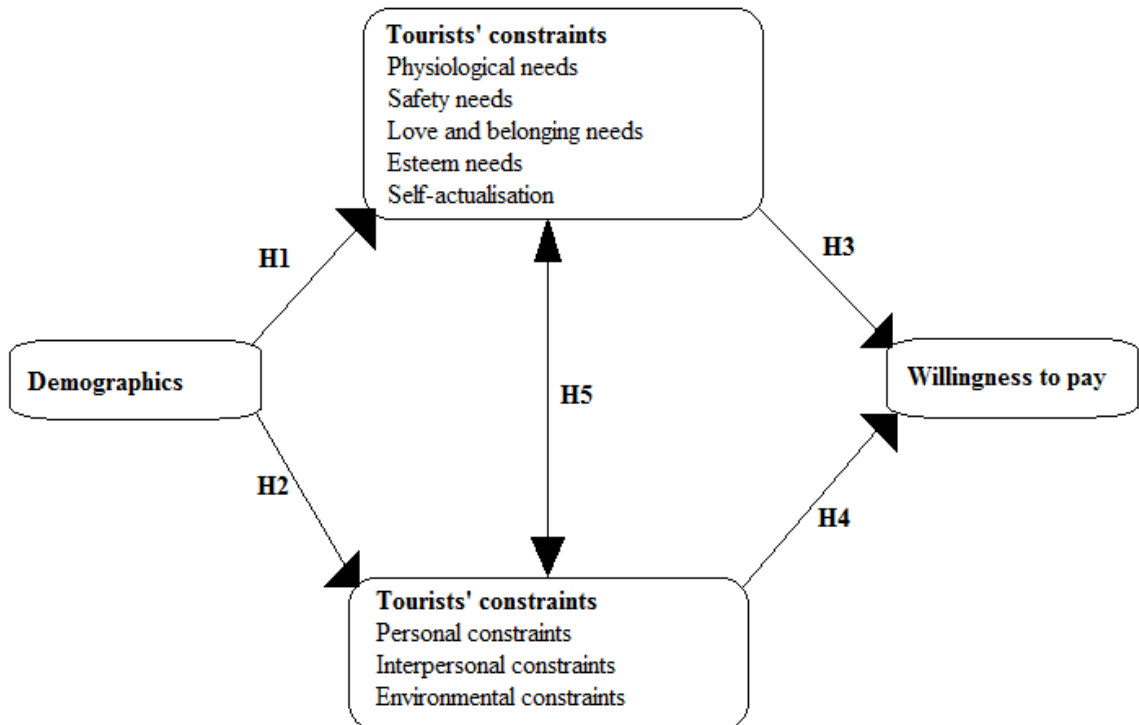


Figure 1. Theoretical framework

the following hypotheses that are tested in this study.

Hypothesis 1 (H1): visitors' demographic characteristics affect their motivation to pay for green hotels;

Hypothesis 2 (H2): visitors' demographic characteristics affect their constraints to paying for green hotels;

Hypothesis 3 (H3) visitors' motivation positively affect their willingness to pay for green hotels;

Hypothesis 4 (H4) visitors' constraints negatively impact their willingness to pay for green hotels;

Hypothesis 5 (H5): motivation outweighs constraints for those willing to pay for green hotels.

Testing the above hypothesis also to expands the existing literature by shedding light on the relationships among the factors affecting the tourists' willingness to pay in green hotels, specifically their motivation and constraints. The graphical illustration of the theoretical framework of this study is presented in the figure below.

Research methodology

The questionnaire is designed based on the literature review and opinions of experts in the industry. The questionnaire consists of four

parts: visitor demographics, motivation, constraint, and willingness to pay for green hotels. Following Lindenberg and Steg (2007) as well as Kollmuss and Ageyman (2002), the motivating and constraining factors have been categorised into several sub-dimensions. Motivation has five sub-dimensions: physiological needs, safety needs, love and belonging needs, esteem needs, self-actualization. Each sub-dimension has three related variables (e.g., "respond to communities environmental demands"). Constraint has three sub-dimensions: personal constraints, interpersonal constraints, environmental constraints. Each sub-dimension has three related variables (e.g., "no information on green hotels"). Visitors' willingness for staying in the green hotels has four variables: wanting to stay in green hotels, feeling the obligation to stay in green hotels, recommending them, and willing to pay extra for them. The questionnaire adopts nominal scale and 5-point Likert-type scale: 5= Strongly Agree, 4= Agree, 3= Neutral, 2= Disagree, 1= Strongly Disagree, to measure the questions.

The respondents' answers regarding their age vary among the following: 18-30, 31-45, 46-60 years old, and 61 or older. Data on their occupation includes the following categories:

Table 1. Hypotheses and test types

Hypothesis	Test type
Hypothesis 1	Independent sample t test, one-way ANOVA
Hypothesis 2	Independent sample t test, one-way ANOVA
Hypothesis 3	Simple regression analysis
Hypothesis 4	Simple regression analysis
Hypothesis 5	Paired sample t test

Table 2. Motivation and gender, marital status, and family status

Motivation	t-value of difference in means of motivation sub-dimensions across gender, marital status, and family status (*p<0.05)		
	Gender	Marital status	Family status
physiological needs	4.43*	-2.06*	-0.81
safety needs	3.95*	-2.36*	-2.19*
love and belonging needs	2.47*	-3.06*	-2.98*
esteem needs	0.05	-2.05*	-2.24*
self-actualization	4.74*	0.05	-2.56*

educator/researcher, manager/executive, clerical/sales, owner/self-employed, labourer/farmer/fisher, student, military/gov. officer, and homemaker. The monthly expenditure includes the following bands: NT\$10000 or less, NT\$10000-20000, NT\$20001-40000, and NT\$40000 or more. Based on the frequency of green activities, the respondents were divided into those who doing it always, usually, sometimes, not often, and never. Their recycling frequency also ranges among always, usually, sometimes, not often, and never.

The survey was conducted during March and April 2011 in three green hotels in Taiwan: Hotel Royal Chihpen, Hotel Color and Guey Lin Hotel, using a simple random sampling method. The number of questionnaires distributed to visitors and collected is 480, however, only 461 were valid. Table 1 below indicates the test types that were employed in testing the listed hypotheses.

Findings and results

Independent sample t-test was conducted to examine whether tourist motivations differ significantly by gender, marital status and family status. Gender has a significant effect on

physiological needs, safety needs, love and belonging needs, and self-actualization ($p < 0.05$). All of these needs seem to be more pronounced in females (see Table 2). Marital status has a significant effect on physiological needs, safety needs, love and belonging needs, and esteem needs; with all of these needs stronger for married visitors (see Table 2). Family status has a significant effect on safety needs, love and belonging needs, esteem needs, and self-actualization, where presence of children in the family emphasises these needs (see Table 2).

Since the variables age, occupation, monthly expenditure, frequency of green activities, and frequency of recycling take more than two values, one-way ANOVA was conducted to examine whether they effect the tourists' motivation. The results are shown in table 3 below. No significant correlation was discovered between various motivational needs and age, monthly expenditure, and frequency of green activities. Occupation has a significant effect on physiological needs, safety needs, and love and belonging needs. Those working in the education sector appear to have the highest motivation (see Table 3). Frequency of

Table 3. Motivation and age, occupation, monthly expenditure, frequency of green activities, and frequency of recycling

Motivation	F-value of difference in means of motivation sub-dimensions across age, occupation, expenditure, and frequency of green and recycling activities (* $p < 0.05$)				
	Age	Occupation	Mo. exp.	Green activ.	Recycling
physiological needs	2.26	4.12*	0.62	2.39	3.99*
safety needs	0.26	4.12*	0.19	1.08	5.50*
love and belonging needs	0.88	4.34*	0.32	1.42	6.42*
esteem needs	0.92	0.22	0.93	1.33	0.89
self-actualization	0.76	0.98	0.45	0.21	4.80*

Table 4. Constraints and gender, marital status, and family status

Constraints	t-value of difference in means of constraints across gender, marital status, and family status (* $p < 0.05$)		
	Gender	Marital status	Family status
Personal constraints	2.30*	2.07*	2.23*
Interpersonal constraints	2.25*	0.37	1.98*
Environmental constraints	1.08	-0.04	1.66

recycling has a significant effect on physiological needs, safety needs, love and belonging needs, and self-actualization. Unsurprisingly, those who recycle more often, generally have a higher motivation to stay in green hotels (see Table 3). Based on the analysis presented in Tables 2 and 3, hypothesis 1, which states that the visitors' demographics, affects their motivations to stay in green hotels, is partially supported.

Regarding the hypothesis 2, independent sample t-test was conducted to examine whether visitor constraints differ significantly by gender, marital status and family status. Gender and family status have a significant effect on personal constraints, and interpersonal constraints (see Table 4). These constraints are more important for females, and for families without children. Marital status has a significant effect only on personal constraint.

Interestingly, unmarried visitors seem to have greater personal constraints (see Table 4).

One-way ANOVA, were conducted to examine whether tourists' constraints differ significantly by age, occupation, monthly expenditure, frequency of green activities, and frequency of recycling. Age, monthly expenditure, and frequency of green activities have no significant effect on the tourists' constraints. Occupation has a significant effect on personal, interpersonal, and environmental constraints (see Table 5). All of these constraints are the highest for labourer/farmer/fisher. Recycling frequency has a significant effect on personal constraints and interpersonal constraints. Unsurprisingly, those who never recycle report the highest constraints (see Table 5). Based on the analysis discussed above (and presented in Tables 4 and 5), hypothesis 2, which states that visitors' demographics affects their constraints, is partially supported.

Table 5. Constraints and age, occupation, monthly expenditure, frequency of green activities, and frequency of recycling

Constraints	F-value of difference in means of constraints across age, occupation, expenditure, and frequency of green and recycling activities (*p<0.05)				
	Age	Occupation	Mo exp.	Green activ.	Recycling
Personal constraints	1.32	4.13*	1.27	0.78	5.34*
Interpersonal constraints	0.98	4.25*	1.04	0.94	4.54*
Environmental constraints	0.54	4.15*	1.53	0.67	2.58

Table 6. Motivation and willingness to stay

Model	Un-STD		STD	t value	R ²
	Beta	Std. Err.	Beta		
(Constant)	2.64	0.18		14.53*	
physiological needs	0.18	0.05	0.18	3.95*	0.23
(Constant)	2.59	0.21		12.59*	
safety needs	0.18	0.05	0.17	3.72*	0.23
(Constant)	2.81	0.18		15.75*	
love and belonging needs	0.14	0.05	0.14	3.06*	0.22
(Constant)	2.98	0.14		20.87*	
esteem needs	0.12	0.04	0.12	2.68*	0.21
(Constant)	2.59	0.19		13.74*	
self-actualization	0.19	0.05	0.19	4.04*	0.23

Note: Dependent variable: Willingness to stay; *p<0.05

Table 7. Constraints and willingness to stay

Model	Un-STD		STD	t value	R ²
	Beta	Std. Err.	Beta		
(Constant)	3.49	0.60		36.89*	
1. Personal constraint	-0.75	0.53	-0.58	-2.33*	0.25
(Constant)	3.62	0.62		31.23*	
2. Interpersonal constraint	-0.80	0.54	-0.62	-2.48*	0.31
(Constant)	3.93	0.65		27.03*	
3. Environment constraint	-0.91	0.55	-0.69	-4.17*	0.33

Note: Dependent variable: Willingness to stay; *p<0.05

Table 8. Comparison of motivation and constraint values

	Visitor Motivation	Visitor Constraint	t-value
mean	3.90	2.84	20.35*
Std Err.	0.54	0.66	

Note: *p<0.05

Simple regression analysis was employed to test the hypothesis 3. Five models were developed to test the relationship between each of five motivation factors as independent variables and willingness to stay in green hotels as the dependent variable. Table 6 shows the results of the regressions. The results reveal that strong positive relationships exist between each of five visitor motivation factors and willingness to stay in green hotels. The R-squared of the regressions takes a value between 0.21 and 0.23, indicating to reasonably good fit between the data and the models. Hence, hypothesis 3, which states that tourists' motivations positively affect their willingness to stay in green hotels, is supported.

Simple regression analysis was also employed to test the hypothesis 4. Three models were developed to test the relationship between each of three constraint types and willingness to stay in green hotels as the dependent variable. The regression results (shown in Table 7) reveal

significant negative relationships between each of constraint types and willingness to stay in green hotels. The R-squared of the three regressions, ranging between 0.25 and 0.33, indicates that the models fit the data reasonably well. Hence, hypothesis 4, which suggests that the constraints negatively impact tourists' willingness to stay in green hotels, is supported.

Lastly, paired sample t-test was employed to test the hypothesis 5. The test results (presented in Table 8) revealed that there is significant difference between visitors' motivation and constraint values. For those staying in green hotels, the motivation factors are more important than the constraints. This result implies that the hypothesis 5 is supported.

Summary, conclusion and suggestions

This study tests five hypotheses related to tourists' willingness to stay in green hotels, their motivation, constraints and demographics. The data analysis reveals the following. Firstly,

visitors of different demographic characteristics hotels, as indicated by the results of testing the

Table 9. Summary of hypotheses testing results

Hypotheses		Test results
H1:	Visitors' demographics affect their motivation.	Partially supported
H2:	Visitors' demographics affect their constraints.	Partially supported
H3:	Motivation positively affects visitors' willingness to stay in green hotels.	Supported
H4:	Constraints negatively affect visitors' willingness to stay in green hotels.	Supported
H5:	Motivation outweighs constraints for those willing to stay in green hotels.	Supported

have different motivations to stay in green hotels. The motivation is generally greater for females, married tourists, especially with children in their families; frequency of recycling activities positively affects their motivation. Secondly, visitors' constraints to stay in green hotels also differ with their demographic characteristics. Constraints are generally higher for females, tourists with children in their families, and those who recycle less frequently. Thirdly, visitors' motivation positively affects their willingness to stay in green hotels. Fourthly, tourists' constraints negatively impact their willingness to stay in green hotels. Finally, the motivation is more significant than the constraints for visitors who choose to stay in green hotels. A brief summary of the hypotheses and the results of the tests are presented in Table 9.

Based on the above conclusions, this research makes the following suggestions to government agencies or hotel owners on promoting green hotels and increasing tourists' willingness to stay at them. First, this study suggests expending efforts in increasing motivation of the following type of tourists: males, unmarried visitors without children, managers and executives, and tourists that do not recycle often. These type of tourists (compared to their counterparts who are females, married with children, employees of the education system, and those who recycle often) have a relatively low motivation levels, which may imply that marginal benefits of increasing it are high. Possibly their motivation can be increased by educating them about the positive aspects of staying in green hotels, including reduced environmental damage and improved public image in case of top managers and executives. Increasing the tourists' motivation will in turn increase their willingness to stay in green

hypothesis 3.

Second, although it is understood that affecting the tourists constraints can be more difficult that affecting their motivation, this study suggests endeavouring to decrease constraints of the following type of tourist: females, unmarried visitors without children, labourers/farmers/fishermen, and those who recycle relatively rarely. Compared to their counterparts, these type of tourists have the most significant constraints, which mean that overcoming those constraints may provide a considerable boost to popularity of green hotels in Taiwan (based on the hypothesis 4).

Third, since demographics affect tourists' motivation and constraints to stay in green hotels, the stakeholders should develop a variety of programs for the visitors of different demographic characteristics; thus increasing the willingness to stay of a variety of tourist groups.

References

- Accenture (2012). Long-term growth, short-term differentiation and profits from sustainable products and services: a global survey of business executives. From <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Long-Term-Growth-Short-Term-Differentiation-and-Profits-from-Sustainable-Products-and-Services.pdf> (Accessed on 20 Feb 2014).
- Best, M.N. & Thapa, B. (2013). Motives, facilitators and constraints of environmental management in the Caribbean accommodations sector. *Journal of Cleaner Production*, 52, 165-175.
- Bohdanowicz, P. (2006). Environmental awareness and initiatives in the Swedish and Polish hotel industries –

- survey results. *International Journal of Hospitality Management*, 25, 662-682.
- Chan, E.S.W. (2008). Barriers to EMS in the hotel industry. *International Journal of Hospitality Management*, 27, 187-196.
- Chen, A. & Peng, N. (2012). Green hotel knowledge and tourists' staying behaviour. *Annals of Tourism Research*, 39, 2203-2219.
- Chen, M-F. & Tung, P.-J. (2014). Developing an extended theory of planned behaviour model to predict customers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221-230.
- Chou, C.-J., Chen, K.-S., & Wang, Y.-Y. (2012). Green practices in the restaurant industry from an innovation adoption perspective: evidence from Taiwan. *International Journal of Hospitality Management*, 31, 703-711.
- Green Hotels Association (2014). What are green hotels? From <http://greenhotels.com/index.php> (Accessed on 5 Feb 2014).
- Fotiadis, A. (2011). A comparative analysis of rural tourism development in Hungary and Greece. *African Journal of Business Management*, 5(19), 7954-7963.
- Fotiadis, A., Michalko, G., & Ratz, T. (2008). Rural Milieu in the Focus of Tourism Marketing. *Journal of Tourism Challenges & Trends*, 1(1), 83-97.
- Fotiadis, A., & Vassiliadis, C. (2010). Rural tourism service quality in Greece. *e-Review of Tourism Research (eRTR)*, 8(4), 69-84.
- Fotiadis, A., Vassiliadis, C., & Piper, L. (2013). Measuring Dimensions of Business Effectiveness in Greek Rural Tourism Areas. *Journal of Hospitality Marketing & Management*, 1-28.
- Fotiadis, A., Vassiliadis, C., & Rekleitis, P. (2013). The constraints and benefits of sustainable development: a case study based on the perceptions of small hotel entrepreneurs in Greece. *Anatolia: An International Journal of Tourism and Hospitality Research*, 24(2), 144-161.
- Han, H., Hsu, L.-T. & Lee J.-S. (2009). Empirical investigation of the roles of attitudes toward green behaviors, overall image, gender, and age in hotel customers' eco-friendly decision-making process. *International Journal of Hospitality Management*, 28, 519-528.
- Han, H., Hsu, L.-T., Lee, J.-S. & Sheu, C. (2011). Are lodging customers ready to go green? An examination of attitudes, demographics, and eco-friendly intentions. *International Journal of Hospitality Management*, 30, 345-355.
- Han, H., Hsu, L.-T. & Sheu, C. (2010). Application of the theory of planned behavior to green hotel choice: testing the effect of environmental friendly activities. *Tourism Management*, 31, 325-334.
- Han, H. & Kim, Y. (2010). An investigation of green hotel customers' decision formation: developing an extended model of the theory of planned behaviour. *International Journal of Hospitality Management*, 29, 659-668.
- Im, S., Bayus, B.L. & Mason, C.H. (2003). An empirical study of innate consumer innovativeness, personal characteristics, and new-product adoption behaviour. *Journal of the Academy of Marketing Science*, 31(1), 61-73.
- International Ecotourism Society (2006). Fact sheet: global ecotourism. From <http://mekongtourism.org/website/wp-content/uploads/downloads/2011/02/Fact-Sheet-Global-Ecotourism-IETS.pdf> (Accessed on 7 Feb 2014).
- Kalafatis, S.P., Pollard, M., East, R. & Tsogas, M.H. (1999). Green marketing and Ajzen's theory of planned behavior: a cross-market examination. *Journal of Consumer Marketing*, 16 (5), 441-460.
- Kallbakken, S. & Saelen, H. (2013). "Nudging" hotel guests to reduce food waste as a win-win environmental measure. *Economics Letters*, 119, 325-327.
- Kang, K.H., Stein, L., Heo, C.Y, & Lee, S. (2012). Customers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management*, 31, 564-572.
- Kasim, A. (2004). Socio-environmentally responsible hotel business: do tourists to Penang Island, Malaysia care? *Journal of Hospitality and Leisure*, 11, 5-27.

- Kollmuss, A. & Agyeman, J. (2002). Mind the Gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8 (3), 239–260.
- Kuneva, M. (2009). Consumers want to make green choices. *The Guardian*. From <http://www.theguardian.com/commentisfree/cif-green/2009/nov/29/climate-change-european-commission> (Accessed on 20 Feb 2014).
- Lee, S. & Park, S.Y. (2009). Do socially responsible activities help hotels and casinos achieve their financial goals? *International Journal of Hospitality Management*, 28, 105-112.
- Lin, C., Morais, D.B., Kerstetter, D.L. & Hou, J. (2007). Examining the role of cognitive and effective image in predicting choice across natural, developed and theme-park destinations. *Journal of Travel Research*, 46, 183-194.
- Lindenberg, S. & Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behavior. *Journal of Social Issues*, 63 (1), 117-137.
- Longoni, C., Gollwitzer, P.M. & Oettingen, G. (2014). A green paradox: validating green choices has ironic effects on behaviour, cognition, and perception. *Journal of Experimental Social Psychology*, 50, 158-165.
- Manaktola, K. & Jauhari, V. (2007). Exploring consumer attitude and behaviour towards green practices in the lodging industry in India. *International Journal of Contemporary Hospitality Management*, 19 (5), 364–377.
- industry. *Current Issues in Tourism*, 6, 197-208.
- Molina-Azorin, J.F., Claver-Cortes, E., Pereira-Moliner, J. & Tari, J.J. (2009). Environmental practices and firm performance: an empirical analysis in the Spanish hotel industry. *Journal of Cleaner Production*, 17, 516-524.
- Taiwanese Environmental Protection Administration (2010). The Green Mark program in Chinese Taipei. From <http://greenliving.epa.gov.tw/GreenLife/eng/E-GreenMark.aspx> (Accessed on 6 Feb 2014).
- Tsai, K.-T., Lin, T.-P., Hwang, R.-L. & Huang, Y.-J. (2014). Carbon dioxide emissions generated by energy consumption of hotels and homestay facilities in Taiwan. *Tourism Management*, 42, 13-21.
- Vassiliadis, C., Fotiadis, A., & Piper, L. (2013). Analysis of rural tourism websites: the case of Central Macedonia. *TOURISMOS: An International Multidisciplinary Refereed Journal of Tourism*, 8(1), 247-263.
- UNEP and UNWTO (2012). Tourism in the green economy: background report. URL:http://www.unep.org/greeneconomy/Portals/88/documents/ger/ger_final_dec_2011/Tourism%20in%20the%20green_economy%20unwto_unep.pdf (Accessed on 8 Feb 2014).
- Wang, J.C. (2012). A study on the energy performance of hotel buildings in Taiwan. *Energy Buildings*, 40, 268-275.
- Watkins, E. (1994). Do guests want green hotels? *Lodging Hospitality*, 50, 70-72.

Masau, P. & Prideaux, B. (2003). Sustainable tourism: a role for Kenya's hotel