

## Preliminary Study: The Influences of Environmental Management Practices and Customer Satisfaction towards Customer Loyalty

Yusnita, Y<sup>a\*</sup>, Yahaya Ibrahim<sup>b</sup>, Zainudin Awang<sup>c</sup>

<sup>a</sup> Faculty of Applied Social Sciences, Universiti Sultan Zainal Abidin, Malaysia  
Email: yusnitayusof@unisza.edu.my

<sup>b</sup> Faculty of Applied Social Sciences, Universiti Sultan Zainal Abidin, Malaysia  
Email: vc@unisza.edu.my

<sup>c</sup> Faculty of Economics and Management Sciences, Universiti Sultan Zainal Abidin,  
Malaysia  
Email: zainudinawang@unisza.edu.my

### Abstract

Green hotel is one of the efforts taken towards achieving environmental sustainability through environmental management practices applied in the hotel. However, up until November 2014, there were only 10 out of 1935 hotels registered with the Ministry of Tourism and Culture, Malaysia received ASEAN Green Hotel Award. This study attempts to examine the environmental management practices in non-green hotels, and also the relationship between environmental management practices, customer satisfaction and customer loyalty among guests in a non-green hotel. Respondents were selected using a random sampling technique and data was analysed using SPSS. The findings show that all the environmental management practices have a positive relationship with customer satisfaction and customer loyalty.

**Keyword:** *Green hotel, environmental management practices, customer satisfaction, customer loyalty, Malaysia*

### 1. Introduction

Malaysia is one of the most popular tourist destinations in Asia. However, issues such as water pollution from tin mining operations, air pollution from industries, waste disposal, climate change, global warming and deforestation have plagued Malaysia for a long time and are all related to environmental problems (Central of Intelligence Agency (CIA), 2015; Zam et al., 2014). Furthermore, haze is also one of the big environmental issues that occur in Malaysia due to forest fires in Indonesia (CIA, 2015). Denman in Badaruddin (2008) stated that the development and management of tourism which are inappropriate and do not comply to the laws and regulations could destroy habitats and natural resources. One of the strategies that has been carried out is through sustainable tourism development, viewed from multiple perspectives, i.e from the environmental, social or economic perspective. Sustainable tourism can contribute to the environment conservation and can provide employment opportunities to the local community (Badaruddin, 2008). There are many types of tourism that are often associated with the sustainability concept. Among them are acceptable tourism, natural tourism, green tourism, eco-tourism and rural tourism. These kinds of tourism may help change mass tourism to become a more sustainable type of tourism that concerns more on environmental and cultural aspects as well as benefit the local communities (Kasim and Scarlat, 2007).

The hospitality industry is one of the industries that have contributed to the environmental problems, through hotel operations that require a lot of resource consumption, such as water and energy, to run daily activities (Kasim, 2009). According to Bahdanowicz (2006), the hotel industry contributed 75% to the environment through inappropriate management of water, energy and waste disposal, and also are victims of the climate change. Due to the increasing environmental awareness among the management of the hospitality industry, the green hotel seems to be growing niche in the competitive lodging industry and the number of customers who are interested to stay in the green hotel has also increased (Manaktola & Jauhari, 2007). Besides that, The J. Power and Associates 2007 North America Hotel Guest Satisfaction Study found that 75% of hotel guests would be willing to stay in an environment-friendly hotel (Butler, 2008).

ASEAN (Association of Southeast Asian Nations) Tourism strictly takes an initiative towards environmental conservation. One of the plans under the ASEAN Tourism Strategic Plan related to this issue is developing a set of ASEAN Tourism Standards along with a certification process. ASEAN NTO (National Tourism Organization) led by Thailand has produced six ASEAN Tourism Standards such as Green Hotel; Food and Beverage Services; Public Restroom; Home Stay; Ecotourism and Tourism Heritage. ASEAN Green Hotel Standards was introduced to recognize hotels that meet standards that have been agreed upon by the ASEAN NTO. ASEAN (2013) has outlined the best practices in the ASEAN Tourism Standards Book 2011-2015 for use by hotel management and has been adopted by the Ministry of Tourism and Culture, Malaysia (MOTAC) as shown in Table 1.

Table 1: ASEAN Green Hotel Standards

	<b>Major Criteria</b>	<b>Requirements - Hotels</b>
1	Environmental policy and actions for hotel operation	1.1 Promotion of environmental activities in order to encourage the involvement of hotel staff, clients 1.2 Existence of plan for raising staff to be aware of environment; i.e. training. 1.3 Existence of environmental management plan for hotel operation. 1.4 Existence of monitoring program for environmental management of hotels.
2	Use of Green products	2.1 Encouragement for the use of local products for hotel operation i.e. food and handicrafts. 2.2 Encouragement for the use of environmentally friendly products.
3	Collaboration with the community and local organizations	3.1 Existence of plans/activities to help improve quality of life of the community. 3.2 Existence of awareness raising programs for local community on environmental protection. 3.3 Creation of activities in promoting culture and traditional performance and local ways of life.
4	Human resource development	4.1 Provision of training programs for operation and management staff on environmental management.
5	Solid waste management	5.1 Introduction of waste management techniques e.g. wastes reduction, reuse, recycling, waste separation and composting.

		5.2 Encouragement of the involvement of hotel staff in waste reduction, reuse, recycling, waste separation and composting program.
6	Energy efficiency	6.1 Introduction of energy saving techniques and / or energy-saving technology and equipment for hotel to reduce energy consumption. 6.2 Installation of meters/equipment to monitor energy consumption.
7	Water efficiency	7.1 Introduction of water saving techniques and / or use of water-saving technology and equipment to reduce water consumption. 7.2 Regular maintenance for water saving equipment.
8	Air quality management (indoor and outdoor)	8.1 Designation of smoking and non-smoking area. 8.2 Regular monitoring and maintenance for equipment and hotel facilities to ensure the air quality i.e. air conditioning.
9	Noise pollution control	9.1 Existence of noise control program from hotel operation.
10	Wastewater treatment and management	10.1 The use of mechanisms to prevent water contamination and reduce wastewater generation. 10.2 Promotion of the use of recyclable/grey water in operation; i.e. watering trees. 10.3 Encouragement for an appropriate use of wastewater treatment.
11	Toxic and chemical substance disposal management	11.1 Provision of clear signs for toxic substance. 11.2 Appropriate hazardous waste disposal management. 11.3 Regular inspection, cleaning and maintenance for storage in order to avoid leakage of gas or toxic chemical substance.

Source: ASEAN (2013)

The hotels that meet the standards will receive the ASEAN Green Hotel Award, which are selected through nominations from each ASEAN member country (ASEAN, 2013). On 19 January 2014, 86 hotels from 10 ASEAN countries received the ASEAN Green Hotel Award 2014 in a ceremony held in Kuching, Sarawak, as an appreciation to the hotels which complied with the green practices included in the ASEAN Green Hotel Standards. The 10 hotels in Malaysia recognized as a green hotel and the list of the hotel is as illustrated in Figure 1.

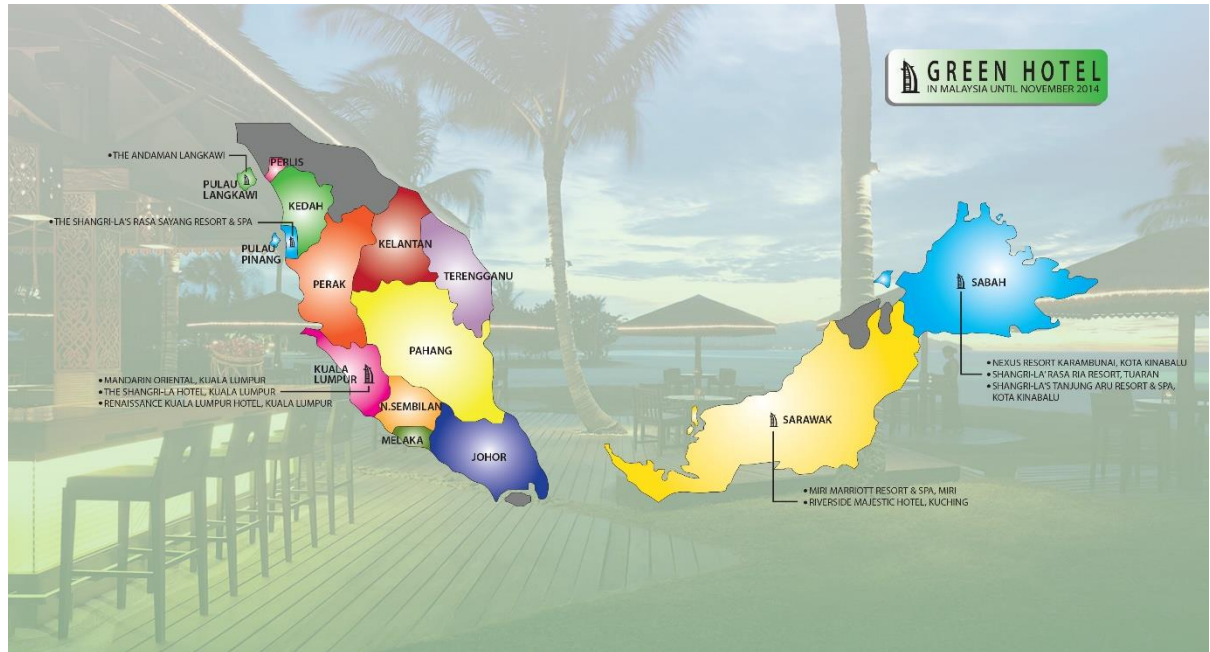


Figure 1: Green Hotel in Malaysia until November 2014

Customer loyalty is a crucial issue in the hospitality industry, especially in the hotel sector because it is the dominant factor in the success of a profit-based organization (Kandampully and Suhartanto, 2000). According to Reichheld and Sasser (1990), an increment of five percent in customer loyalty can increase the profit from between 25 percent to 85 per cent. Dominici and Guzzo (2010) stated that one of the biggest challenges for managers in the hotel industry nowadays is to provide and sustain customer satisfaction and customer loyalty since the number of accommodations provided increase each year. However, previous research found that not all satisfied customers become loyal customers. The level of brand loyalty among customers has decreased since a few decades ago and customers tend to change providers if the other competitor offers a better experience, new opportunities and a lower price, especially for the same products and services (Pleshko & Heiens, 2014; Riezeboz, 2003; Sivadas & Baker-Prewitt, 2000; Reichheld @ Sasser, 1990).

## 2. Research Objectives

The general objective of this research is to determine the environmental practices in the hotel industry in Malaysia. Specifically, it investigates the impact of and to what extent the environmental management practices has on customer satisfaction and customer loyalty in a non-green hotel. The objectives for this research are as follows:

To organise the number of environmental management practices and customer loyalty items.

To identify the reliability of the variable (environmental management practices, customer satisfaction and customer loyalty).

To assess the relationship between environmental management practices, customer satisfaction and customer loyalty.

### 3. Methodology

This pilot study involved hotel guests in the non-green hotel. Respondents consisted of tourists who have stayed in a non-green hotel, using a random sampling method. For the pilot study, respondents were selected in the departure hall of Sultan Mahmud Airport, Terengganu. Data were analysed using Statistical Package for the Social Sciences (SPSS) software. There were 124 people selected as respondents for the pilot study. 15 questionnaire papers were rejected due to incomplete responses. However, 109 cases out of 124 were reliable to be analysed. Three analyses was conducted, which were exploratory factor analysis (EFA), reliability analysis and correlation analysis.

#### 3.1 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) is a procedure used by researchers to identify, reduce and organise a number of items in a questionnaire into specific constructs (Chua, 2009). According to Gorsuch (1983), a sample size of at least 100 for conducting exploratory factor analysis is acceptable. Since this study has 109 samples for the pilot study, it is valid to run the analysis. For this analysis, the researcher used the Principal Component Factor Analysis and measured the sampling adequacy using Kaiser-Meyer-Olkin (KMO) and also Bartlett's Test to identify whether the construct was significant or not to conduct further analysis.

The KMO test refers to the multicollinearity within the items (Chua, 2009). If the value of the test exceeds 0.6, it means that the items are suitable for factor analysis (Kaiser, 1974), while according to Chua (2009), it is already acceptable if the value is more than 0.5. Bartlett's Test refers to identifying the correlation between the items (Chua, 2009). If the significance value is close to 0.0 ( $p < 0.05$ ), this indicates that the items are sufficient to proceed with the factor analysis (Zainudin, 2014).

#### 3.1.1 Environmental Management Practices

Table 2: KMO and Bartlett's Test for Environmental Management Practices

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.905
Bartlett's Test of Approx. Chi-Square	1933.134
Sphericity df	210
Sig.	.000

Table 2 shows that the value of KMO is 0.905, while the result from the Bartlett's Test of Sphericity was significant (Chi-square = 1933.134, p-value < 0.000). This means that the sampling was adequate to proceed into factor analysis.

Table 3: Rotated Component Matrix<sup>a</sup>

No.	Item	Component			
		1	2	3	4
1	EMP17	.842			
2	EMP18	.832			
3	EMP19	.824			
4	EMP16	.706			
5	EMP20	.682			
6	EMP11	.677			

7	EMP21	.637			
8	EMP15	.581			
9	EMP14	.547			
10	EMP3	.501			
11	EMP2		.765		
12	EMP1		.734		
13	EMP5		.686		
14	EMP6		.676		
15	EMP13		.574		
16	EMP7			.748	
17	EMP4			.697	
18	EMP10			.697	
19	EMP12			.599	
20	EMP8				.730
21	EMP9				.606

Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>

a. Rotation converged in 7 iterations.

According to Table 3, all the 21 items were separated into four components, namely component 1, component 2, component 3 and component 4 based on the factor loading. In this case, items 11, 16, 17, 18, 19, 20 and 21 were organised under component 1. Meanwhile, items 1, 2, 5 and 6 fall under component 2. Component 3 has three items, that is item 4, 7 and 10, while item 8 and item 9 fall under component 4. Since items 3, 12, 13, 14 and 15 have a factor loading not exceeding 0.6, these five items were excluded from the analysis. After the exploratory factor analysis, the total items under construct environmental management practices are 16, and four factors have been identified.

### 3.1.2 Customer Satisfaction

Table 4: KMO and Bartlett's Test for Customer Satisfaction

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.924
Bartlett's Test of Sphericity	Approx. Chi-Square	1737.675
	df	91
	Sig.	.000

Table 4 shows that the value of KMO is 0.924, while the result from the Bartlett's Test of Sphericity was significant (Chi-square = 1737.675, p-value < 0.000). This means that the sampling was adequate to proceed into factor analysis.

Table 5: Rotated Component Matrix<sup>a</sup>

No.	Item	Component	
		1	2
1	CS 8		.775
2	CS 9		.820
3	CS 10		.866
4	CS 11		.729

5	CS 12		.729
6	CS 13		.689
7	CS 14		.647
8	CS 1	.800	
9	CS 2	.784	
10	CS 3	.777	
11	CS 4	.829	
12	CS 5	.837	
13	CS 6	.765	
14	CS 7	.775	

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 3 iterations.

According to Table 5, all the 14 items were separated into two components, namely component 1 and component 2 based on factor loading. In this case, items 1, 2, 3, 4, 5, 6, and 7 are organised under component 1. Meanwhile, items 8, 9, 10, 11, 12, 13 and 14 fall under component 2. The total items in this construct was maintained as 14 items after the exploratory factor analysis and two factors were identified.

### 3.1.3 Customer Loyalty

Table 6: KMO and Bartlett's Test for Customer Loyalty

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.938
Bartlett's Test of Approx. Chi-Square	1629.057
Sphericity df	36
Sig.	.000

Table 6 shows that the value of KMO is 0.938, while the result from the Bartlett's Test of Sphericity was significant (Chi-square = 1629.057, p-value < 0.000). This means that the sampling was adequate to proceed into factor analysis.

Table 7: Rotated Component Matrix<sup>a</sup>

No.	Item	Component	
		1	2
1	CL 1	.889	
2	CL 2		.710
3	CL 3	.832	
4	CL 4	.836	
5	CL 5	.854	
6	CL 6	.819	
7	CL 7	.713	.648
8	CL 8		.856
9	CL 9		.874

Extraction Method: Principal Component Analysis.  
Rotation Method: Varimax with Kaiser Normalization.  
a. Rotation converged in 3 iterations.

According to Table 7, all the nine items were separated into two components, namely component 1 and component 2 based on factor loading. In this case, items 1, 3, 4, 5 and 6 are organized under component 1. Meanwhile, items 2, 8 and 9 fall under component 2. Item 7 was deleted because it falls under both of the two components, Component 1 and Component 2. To prevent any problems in further analysis such as Confirmatory Factor Analysis, this item CL 7 was thus removed from the list of question under this construct. After the exploratory factor analysis, the constructs have eight items which are valid for further analysis.

### 3.2 Reliability Analysis for Pilot Study

**Table 8: Reliability Analysis**

Dimension/Variable	No. of items	Cronbach's (n=109)	Alpha
<b>Environmental Management Practices</b>	16	0.941	
<b>Component 1</b>	7	0.945	
<b>Component 2</b>	4	0.858	
<b>Component 3</b>	3	0.715	
<b>Component 4</b>	2	0.796	
<b>Customer Satisfaction</b>	14	0.965	
<b>Affective</b>	7	0.941	
<b>Cognitive</b>	7	0.956	
<b>Customer Loyalty</b>	8	0.972	
<b>Attitudinal</b>	5	0.983	
<b>Behavioral</b>	3	0.927	

According to Table 8, the Cronbach's Alpha for the four variables showed the value of between 0.70 to 0.98. This means all the variables involved have good value of reliability coefficient and are acceptable for further analysis.

### 3.3 Correlation Analysis

From Pearson Correlation analysis, all the dimensions of environmental management practices have significant relationship with customer satisfaction and customer loyalty, as shown in Table 9. However, the relationship is at a moderate level. Meanwhile, customer satisfaction has good relationship with customer loyalty ( $r=0.826$ ,  $p > 0.01$ ).

**Table 9: Correlation Analysis**

		<b>GREEN PRACTI CES</b>	<b>EMP COM P1</b>	<b>EMP COM P2</b>	<b>EMP COM P3</b>	<b>EMP COM P4</b>	<b>SAT.</b>
<b>EMPCO MP1</b>	Pearson Correlation	.925**					
	Sig. (2-tailed)	.000					
	N	109					
<b>EMPCO MP2</b>	Pearson Correlation	.858**	.702**				
	Sig. (2-tailed)	.000	.000				



	N	109	109				
<b>EMPCO MP3</b>	Pearson Correlation	.744**	.538**	.562**			
	Sig. (2-tailed)	.000	.000	.000			
	N	109	109	109			
<b>EMPCO MP4</b>	Pearson Correlation	.785**	.659**	.585**	.576**		
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	109	109	109	109		
<b>SAT.</b>	Pearson Correlation	.559**	.461**	.469**	.523**	.488**	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	109	109	109	109	109	
<b>LOYALTY</b>	Pearson Correlation	.601**	.527**	.547**	.490**	.446**	.826**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
	N	109	109	109	109	109	109

\*\* Correlation is significant at the 0.01 level (2-tailed).

#### 4. Conclusion

From this preliminary study, all the items after KMO were adequate for further analysis. The reliability test also shows that the variables have good values and was acceptable for analyses. Meanwhile, from the correlation analysis, the application of environmental management practices is expected to increase the loyalty among hotel guests. This means that the need for green practices is an important element to be considered in the hotel industry as it is an important and significant aspect for the protection of the environment.

#### 5. References

- ASEAN. (2013). *ASEAN Tourism Standards*. Retrieved 13 February 2014, from [http://www.aseantourism.travel/media/files/20130111081324\\_asean\\_tourism\\_standards\\_book.pdf](http://www.aseantourism.travel/media/files/20130111081324_asean_tourism_standards_book.pdf)
- Badaruddin Mohamed. (2008). *Pelancongan lestari*. Kuala Lumpur. Dewan Bahasa Dan Pustaka.
- Bohdanowicz, P. (2006). *Responsible Resource Management In Hotel- Attitudes, Indicators, Tools And Strategies*. Published PhD thesis, University of Hawaii USA.
- Butler, J. (2008). The compelling “hard case” for “green” hotel development. *Cornell Hospitality Quarterly*, 49(3), 234–244.
- Central Intelligence Agency. CIA. (2015). *The World Factbook- Environmental-Current issues*, retrieved 24 August 2015, from <https://www.cia.gov/library/publications/the-world-factbook/fields/2032.html>

Chua, Y.P. (2009). *Statistik penyelidikan lanjutan: Ujian regresi, analisis faktor dan analisis sem.* Malaysia. Mc Graw-Hill (Malaysia) Sdn. Bhd

Dominici, G. and Guzzo, R. (2010). Customer satisfaction in the hotel industry: A case study from Sicily. *International Journal of Marketing Studies*, 2(2), 3-12.

Gorsuch, R.L. (1983). *Factor analysis* (2<sup>nd</sup> ed.). Hillsdale, NJ:LEA.

Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: The role of customer satisfaction and image. *International Journal of Contemporary Hospitality Management*, 12(6), 346–351. doi:10.1108/09596110010342559

Kasim, A. (2009). Managerial attitudes towards environmental management among small and medium hotels in Kuala Lumpur, *Journal of Sustainable Tourism*, 17(6), 709-725

Kasim, A. and Scarlet, C. (2007). Business environmental responsibility in the hospitality industry, *Management*, 2(1), 5-23

Manaktola, K., and 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

Pleshko, L.P. and Heiens, R.A. (2014). Customer satisfaction and loyalty in the Kuwait retail services market: Why are satisfied buyers not always loyal buyers? *The International Review of Retail, Distribution and Consumer Research*, 25(1), 1-17.

Reichheld, F. F., & Sasser, W. E. (1990). Zero defections: quality comes to services. *Harvard Business Review*, 68(5), 105–11. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10107082>

Riezeboz, R. (2003). *Brand management; A theoretical and practical approach.* Forlagsort: Pearson Education.

Sivadas, E. and Baker-Prewitt, J.L. (2000). An examination of the relationship between service quality, customer satisfaction and store loyalty. *International Journal of Retail and Distribution Management*, 28(2/3), 73-82

United Nation World Tourism Organization (UNWTO). (2011c). *Tourism towards 2030: Global Overview.* Retrieved on 1 Feb 2015, from [http://media.unwto.org/sites/all/files/pdf/unwto\\_2030\\_ga\\_2011\\_korea.pdf](http://media.unwto.org/sites/all/files/pdf/unwto_2030_ga_2011_korea.pdf)

United Nation World Tourism Organization (UNWTO). (2014). *Tourism highlights: 2014 edition.* World Tourism Organization, Madrid.

Zainudin, A. (2014). *A handbook of SEM for academicians and practitioners.* Bangi: MPWS Rich Publication

*SOCIAL SCIENCES POSTGRADUATE INTERNATIONAL SEMINAR (SSPIS) 2015*  
*e-ISBN 978-967-11473-2-0*

Zam, Z. M., Tengku, R. T. A., Azni, S.S. and Mai, F.M.B.M. (2014). Intention to visit green hotel in Malaysia: The impact of personal traits and marketing strategy, *International Journal of Business and Social Science*, 5(7), 167-173.