

# Factors Influencing Environmental Management Practices Among Hotels in Malaysia

Zaiton Samdin, Kasimu Abdu Bakori, Hamimah Hassan

**Abstract**—This paper attempts to investigate the factors that influence hotel managers' attitudes towards sustainable tourism practices (STP) in Kuala Lumpur and the state of Selangor in Malaysia. The study distributes 104 questionnaires to hotels ranging from one star to five-star categories including budget hotels. Out of this figure, 60 copies of the questionnaires were returned and analyzed. The finding revealed that of all the seven factors investigated, only the variables measuring incentives and knowledge have significantly influenced sustainable tourism practices in the country. Therefore, government and other green bodies within the country should continue to provide hotels with incentives for sound technologies. Moreover, the government agencies should continue to educate hoteliers on the relevance of environmental protection for the successful implementation of sustainable tourism practices.

**Keywords**—Attitude, incentive, knowledge, sustainable tourism practices

## I. INTRODUCTION

FOR the past decades, the United Nations expressed their concern about environmental protection [1]. Air pollution, energy induced emission and waste generations are some of the environmental hazards associated with human activities. Initial concern was on manufacturing industries involving oil and gas. However, recent studies revealed a growing concern on hotel organizations as a sector of the tourism industry whose activities afflict the environment [2], [3]. It involves the consumption of a vast amount of local and imported non-durable goods, furnishings and appliances, but lacks sufficient facilities for water conservation, waste and energy management [4], [5]. It has therefore become imperative for the hotel industry to initiate practices that sustain the environment.

[6] and [7] asserted that the implementation of sustainable tourism practices (STP) among hotels would help them reduce the cost of operating hotel businesses. STP also will enable hotels to improve on their image and to also safeguard the environment. This paper presents the findings of a study that investigate factors influencing hotels to adopt STP in Malaysia.

Zaiton Samdin is with Faculty of Forestry and Institute of Tropical Forestry and Forest Products, Universiti Putra Malaysia (Phone: 00603-89467872; email: zaisa@putra.upm.edu.my)

Kasimu Abdu Bakori is a postgraduate student in the Hospitality and Recreation Department at Faculty of Economics and Management in Universiti Putra Malaysia (email: kasimuabdubakori@yahoo.com)

Hamimah Hassan is with Faculty of Economics and Management, Universiti Putra Malaysia (Phone: 00603-89467704; email: ranalis@econ.upm.edu.my)

The study involved a sample of 60 hotel top managers drawn from the state of Selangor and the Federal Territory of Kuala Lumpur. According to the results, it was hypothesized that factors influencing STP are significantly related to hotel managers' attitude towards STP. It was revealed that knowledge and initiatives are the most significant predictors in STP among the seven variables that have been investigated.

## II. SUSTAINABLE TOURISM PRACTICE AMONG HOTEL

The hotel sector has been identified as a major area of concerned for STP [7]. It has been known to be associated with large-scale waste generation as well as been a major consumer of vast amount of imported furnishings, energy and water [2], [3], [5]. Despite this high consumption of durable and non-durable goods, the hotel sector is not actively involved in adopting practices that protects the environment [1], [2], [8]. Many reasons can be attributed to these trends, which include lack of information and awareness [2]. For instance, small and medium hotels in Kuala Lumpur were reluctant in adopting STP due to lack of awareness and information concerning environmental issues [2].

However, recent studies by [2] and [9] indicated that hotel organizations are beginning to adopt and implement STP in their hotels. The researchers identified the benefit of reduced cost of operations and the reasons for environmental protection as the motivating factors. Other reasons include image building and the provision of safe and comfortable environment for the hotel guests [6], [7]. Hence, hotels are now beginning to adopt various programs in STP involving energy management, waste management and water conservation [1], [3], [7], [10], [11].

## III. MAJOR AREA OF STP AMONG HOTEL

As mentioned earlier some hotel organizations around the world are now beginning to adopt practices that protect the environment. Various studies have indicated three major areas in STP which include: (1) energy management; (2) waste management; and (3) water conservation [1], [7], [9], [11]. Some of the hotels adopt these practices in major sections of the housekeeping departments, food and beverage department, guest rooms, as well as conference and meeting areas. Therefore, this section discusses on energy management, waste management and water conservation as the three key areas in STP.

### A. Energy Management

According to previous studies by [7], [11], [12], [13] the hotel sector is one with the most energy consumption with high-energy utilities. It was reported by some of these researchers that virtually, all the operational areas requires and uses energy in the form of electricity and fossil fuels. The consequence of this high usage of energy in the hotel often resulted to the increase emission of toxic chemicals in the form of sulfur dioxide and nitrogen oxide [14]. The final result led to acid rain and global warming, which are two of the most recent issues of environmental concerned. Furthermore the use of energy resources in the hotel industry contributes to high cost of operating hotel business [6].

To reduce the cost of using energy resources, some hotels are now beginning to adopt various STP which include the use of energy-saving equipments, the use of compact florescent bulbs, and the shutting down of unused appliances and equipments [7], [14]. For instance, hotels in the Great Accra Region of Ghana now uses energy efficient bulbs as the most effective energy saving practice in their hotels; Shangri-la hotels and resorts is now using energy-saving lamps in more than half of the hotels' guest rooms all over the world.

### B. Waste Management

Since the hotel sector has been identified as the largest consumer of durable and non-durable goods, it is expected that the sector generates huge amount of waste [1], [3]. For instance, the food and beverage department generates various solid and organic waste in the form of packaging and food waste, aluminum cans, glass bottles and cooking oil [15]; while the housekeeping department generate wastes in the form of cleaning materials and plastic packaging. It was estimated that 1 kg of waste is generated by a hotel guest every day. It has therefore become necessary to adopt STP that safeguards the environment. Also, STP among hotels in waste management will help to reduce the cost of operating hotel business. Hence most academic literatures now emphasized on the four Rs' (Reuse, Reduce, Recycle and Recover) as the most effective in waste management [16]. Similarly, the reduction of waste generation during food preparation by the hotel's kitchen is another method of reducing wastage in the hotel industry.

### C. Water Conservation

Water has been described as one of the major resources in the hotel industry [17]. Water is needed in the hotel for various activities involving laundry, food production, bathroom and other outdoors facilities [18]. Previous studies indicate high level of water consumption among hotels. For instance, reference [19] discovered a water consumption rate amounting to 440 liters per guest per night; while reference [20] discovered a water use index of 4.5 M<sup>3</sup>/M<sup>2</sup> among hotels in Hong Kong. To help conserve water resources in the hotel, water management practices in now being implemented. Some of the major practices in water management include the use of low-flow or infrared – activated faucets, low-flow shower-heads, low-water volume toilets, regular fixing of toilet lacks;

and the use of water-efficient laundry equipment and dishing-washers [7], [17], [21], [22], [23]. Furthermore, the reuse of towels and linens by hotel guests not only helps hotels in reducing the water consumption but also reduce the cost of running the hotel. The implementation of these practices will enable hotels to save some quantities of water for the hotel. For instance, hotels in Sydney were able to reduce their water consumption by 50 percent through water management practices [17].

## IV. FACTORS INFLUENCING STP

As mentioned earlier, this paper attempts to examine the factors that influence STP among hotels. Previous studies by [1], [2], [24] have identified general factors which influence STP namely, incentives, knowledge, training, regulation, reduced cost, top management and formalization. Therefore, the following section discusses each of the seven mentioned factors as an important component that influences STP among hotels.

### A. Incentives

Incentive has been identified as one of the major factor in STP [24]. As cost is a limiting factor in adopting STP among hotels, government policy on incentives will determine the level of STP among hotels [2].

The provision of incentive by the government and other green bodies will enable hotels to adopt conventional methods in STP. For instance, hotels in Caracao were not able to adopt and implement STP due to lack of incentives from the public authorities. The same reason was responsible for lack of adopting STP among small and medium hotels in the Bahamas [24].

### B. Knowledge

Knowledge acquisition has been described as one of the determining factor in organizational behavior. In the hotel industry, lack of knowledge among staff may affect the overall performance of the hotel. For instance reference [25] conducted a study involving STP among hotel managers in Spain and discovered that most of them were not only confused on the concept of STP, but lack awareness on their contributing effort to STP. According to reference [25] this lacks of knowledge is responsible for the low-level participation in STP among hotels in Spain.

### C. Training

The relevance of training in STP has long been acknowledged [2]. Staff training on areas related to STP has been described as a factor for the effective enhancement of STP [26]. For instance, every hotel in Jamaica has acquainted their staff members with relevant information on STP [27]. Therefore, staff training in the areas of energy management, water consumption, recycling of waste, as well as government environmental requirements will all lead to a sound STP.

#### D.Regulation

Regulation has been described as a major factor that influences hotels to adopt STP [2], [7]. According to reference [7] hotels in Ghana were able to succeed in STP because of regulations set by the government. Also, some member countries from the European Union have introduced environmental laws and code of conduct to check environmental impacts of tourism [28] as cited in [26].

#### E. Reduced cost

Most previous studies in STP indicate that reduction in the cost of running hotel as a major reason in STP [3], [12], [29]. Among hotels in Germany, reference [12] found that cost saving involving energy management, water conservation and waste management as the key driver in adopting STP.

#### F. Top management

According to reference [9] support from the top management is a vital factor in STP. Top management staffs are the main initiators of STP in the hotel. For any STP to be effective all policies must emanate from the top management staff [25], [29]. It has therefore, became necessary to have the support of top management staff as a factor in STP.

#### G.Formalization

Formalization in the form of policy is described as an important determinant in STP [29]. It is considered as one of the first steps in the general principles of STP that must emanate from the top management staff [29]. As such, most hotel organizations formulates various policies in order to achieve the objectives of STP.

### V. METHODOLOGY

This study utilized a sample of 60 hotel top managers who were drawn from 104 hotel organizations. The 60 respondents comprised of hotel top managers of different categories of hotels located within the federal territory of Kuala Lumpur and the state of Selangor in Malaysia.

With regards to the data collection method, this study distributed 104 questionnaires to hotels in Kuala Lumpur and Selangor from the ratings of one to five star hotels including budget hotels. Out of this figure, 60 copies of the questionnaires were duly completed and returned back to the authors. The major variable investigated in this study is the factor influencing STP that consists of 10 items measured on the seven-point Likert type scale.

Dependent variable in this study is Sustainable Tourism Practices. The respondents were asked to indicate their commitment to sustainable tourism practices using a 7-point Likert-type scale ranging from 1= strongly disagree; 2= partially disagree; 3= disagree; 4= neutral; 5= agree; 6= partially agree; 7= strongly agree. Independent variables are factors influencing STP; regulation, training, environmental policy, knowledge, incentive, top management, and reduced cost. These seven factors developed by the researchers were based on reviews made on previous literatures.

### VI. RESULTS AND DISCUSSION

To achieve the intended purpose for this paper the study utilized the multiple linear regression analysis using the enter method. The purpose of the enter method of multiple linear regression was to determine the factor(s) that make the most contribution in STP. According to the result of multiple regression analysis it was found that the coefficient of determinant ( $R^2$ ) was .505, while the multiple correlation coefficient was .711. This means that a total of 50.5 percent variance in STP is explained by all the seven factors influencing STP. As depicted in Table 1, result of multiple regression analysis indicates two out of the seven factors as the most predictors in STP.

As can be observed in Table 1, in the column for standardized coefficient (Beta), only two out of the seven variables has the highest figures: (1) knowledge ( $\beta=.409$ ,  $p=0.005$ ), and incentive ( $\beta=.344$ ,  $p=0.007$ ). According to the table the variable of knowledge is explained by 41 percent of variance in STP while incentive has 34 percent. It can then be posited here that these two factors (knowledge and incentive) shows the most significant prediction in STP among hotels in Malaysia.

TABLE I  
RESULTS OF MULTIPLE REGRESSIONS

	B	SE	Beta	t	p
(Constant)	44.26	8.65		5.12	.000
Regulation	0.49	0.65	0.1	0.76	0.448
Training	0.82	0.75	0.17	1.09	0.28
Policy	0.68	0.71	0.15	0.97	0.337
Knowledge	3.93	1.34	0.41	2.94	0.005
Incentive	2.61	0.92	0.34	2.83	0.007
Top Management	-1.07	1.39	-0.11	-0.77	0.444
Reduced Cost	-0.57	1.05	-0.06	-0.54	0.591

In terms of knowledge, it can be mentioned here that the more knowledgeable hotel managers are, then the more likely they adopt STP in their hotels. This finding is in tandem with the findings of reference [2] and [25]. According reference [25] hotel managers' knowledge in STP was reported to be a major determinant of STP among hotels in Jamaica, while reference [2] identified knowledge as a major determinant of STP among Malaysia hotels. As for the incentives, finding of this study supports previous findings by reference [24]. In his study involving 15 family Island hotels and 33 Nassau paradise hotels in the Bahamas, Reference [24] discovered incentive as a major determinant in STP. Therefore, some form of incentives from the government and other green bodies will determine the level of adopting STP among hotels.

On the other hand, results of multiple regression analysis revealed that five of the seven variables have no significant statistical contribution to STP among the hotels investigated. As can be observed in Table 1, the variables measuring regulation, training, formalization, top management and reduced cost had an alpha value that were higher than the accepted value of 0.05. Hence, these five variables were reported to have no significant contribution to STP among Malaysian hotels.

## VII. CONCLUSIONS

This paper proposed to examine the factors influencing STP among hotels in Kuala Lumpur and the state of Selangor in Malaysia. As predicted earlier, findings from the study were in the hypothesized direction in which two of the factors measuring incentives and knowledge significantly influenced STP. However, the variables measuring regulation, training, formalization, top management, and reduced did not reveal a significant contribution to STP among hotels in the Malaysia. It can be concluded that hotel managers in Malaysia were aware of the contributing factors involving incentives and knowledge for the successful adoption of STP in their hotels. Therefore, the government and other green bodies should continue to assume a leading role in providing incentives to Malaysian hotels. Apart from tax incentives being provided by the Malaysian Industrial Development Authority (MIDA) covering investment in new hotel development, such incentives should be extended to cover investment in environmental technology.

In terms of the contributing role of knowledge acquisition in STP the Malaysian government and other green bodies should continue to engage in large scale publicity in order to create awareness among hoteliers. Furthermore, hotel managers in the country should collaborate with higher institutions of learning for short and medium – term courses involving STP. This contributes in efforts to create awareness among hoteliers in the country.

## REFERENCES

- [1] W. Chong, K. Wong and J. Lo. "Hong Kong Hotels' Sewage: Environmental Cost and Saving Technique", *Journal of Hospitality & Tourism Research*, 33(2): 329-346, 2009.
- [2] A. Kasim. "Managerial attitudes towards environmental management among small and medium hotels in Kuala Lumpur", *Journal of Sustainable Tourism*, 2009.
- [3] P. Bohdanowic. "European hoteliers' environmental attitudes: greening the business", *Cornell Hotel and Restaurant Administration Quarterly*, 46(2): 188, 2006.
- [4] B. Bramwell and L. Alletorp. "Attitudes in the Danish tourism industry to the roles of business and government in sustainable tourism", *International Journal of Tourism Research*, 3(2): 91-103, 2001.
- [5] D. Kirk. "Attitudes to environmental management held by a group of hotel managers in Edinburgh", *International Journal of Hospitality Management* 17: 33-47, 1998.
- [6] S.W. Chan. "Barriers to EMS in the hotel industry", *International Journal of Hospitality Management*, 27(2): 187-196, 2008.
- [7] Mensah. "Environmental management practices among hotels in the great Accra region", *Hospitality Management*, (25): 414-431, 2006.
- [8] K. Hobson and S. Essex. "Sustainable tourism: A view from accommodation business", *The Service Industries Journal*, 21(4): 133-146, 2001.
- [9] B.H. Ustad. "The Adoption and Implementation of Environmental Management Systems in New Zealand Hotels: The Managers' Perspective", 2010. Unpublished Master of Science dissertation, Auckland University of Technology.
- [10] K. Webster. "Environmental management in the hospitality industry", New York: Cromwell, 2000.
- [11] J. Park. "The relationship between top managers' environmental attitudes and environmental management in hotel companies", 2009. Unpublished Master of Science dissertation, Virginia Polytechnic institute and State University, Virginia.
- [12] P. Sloan, W. Legrand and J.S. Chen. "Factors influencing german hoteliers' attitudes towards environmental management", *Advances in Hospitality and Leisure*, 1: 179-188, 2004.
- [13] S. Becken, C. Frampton and D. Simmons, D. "Energy consumption patterns in the accommodation sector—the New Zealand case", *Ecological Economics*, 39(3): 371-386, 2001.
- [14] W. Chan and J. Lam. "Prediction of pollutant emission through electricity consumption by the hotel industry in Hong Kong", *International Journal of Hospitality Management*, 21: 381-391, 2002.
- [15] C. Baker. "A welcome sign: hotels adopt reuse and recycling, 2008. *Waste Management World website*". Retrieved December 2, 2009 from [http://www.wastemanagementworld.com/articles/article\\_display.cfm?ARTICLE\\_ID=271254&p=123](http://www.wastemanagementworld.com/articles/article_display.cfm?ARTICLE_ID=271254&p=123)
- [16] P. Sloan, W. Legrand, H. Tooman and J. Fendt. "Best practices in sustainability: German and Estonian hotels", *Advances in Hospitality and Leisure*, 5: 89-107, 2009.
- [17] Hotel Online Special Report. "Consumer Attitudes towards the Role of Hotels in Environmental Sustainability/International Hotels Environment Initiative Research", 2002. [On-line] Available: <http://www.sciencedirect.com/science>
- [18] C. Baker. "Sustainable Hotel", London: Prince of Wales Business Leadership Forum, 2005.
- [19] Radisson SAS. "Responsible Business Report, 2002.Radisson SAS Hotels & Resorts", Brussels, Belgium.
- [20] M. Deng and J. Burnett. "Water use in hotels in Hong Kong", *Hospitality Management*, 21, 57-66, 2002.
- [21] S. Brodsky. "Water conservation crucial to energy savings", *Hotel & Motel Management*, 220(13): 12, 2005.
- [22] N. Erdogan and E. Baris. "Environmental protection programs and conservation practices of hotels in Ankara, Turkey", *Tourism Management* 28 (2): 604-61, 2007.
- [23] M. Sherman. "Green lodging program helps revive Florida hotels", *Hospitality Construction*, (2): 66-70, 2008.
- [24] T.J. Edwards. "Making Tourism Sustainable. Environmental Incentives for Sustainable Tourism: A Renewed Strategy for Tourism Development in Small Island Developing States", 2004.
- [25] S. Ayuso. "Adoption of Voluntary Environmental Tools for Sustainable Tourism, Analysing the Experience of Spanish Hotels", *Corporate Social Responsibility and Environmental Management*, 13(4): 207-220, 2006.
- [26] A. Kasim and H. Dzakiria. "Encouraging environmental management among small and medium accommodations (SMAs) through e-learning initiative", *Turkish Online Journal of Distance Education-TOJDE*, 10 (2): 1-10, 2009.
- [27] B. Meade and J. Pringle. Environmental management systems for Caribbean hotels and resorts: A case study of five properties in Jamaica", *Journal of Quality Assurance in Hospitality and Tourism*, 2(3/4): 149-159, 2001.
- [28] J. Cheney and S. Barnett. "The greening of accommodation: Stakeholders perspectives of environmental programs in New Zealand hotels and luxury lodges", *The Journal of Corporate Citizenship*, 1, 115-126, 2001.
- [29] D. Kirk. "Environmental Management in Hotels", *International Journal of Contemporary Hospitality Management*, 7(6): 3-8, 1995.