

Different Shades of Green: Environmental Management in Hotels in Accra

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ABSTRACT

This paper assesses the environmental management practices of different categories of hotels in Accra, Ghana. Managers of 200 hotels were surveyed, employing the stratified random sampling method. Results of the study indicate significant differences in the extent of environmental management of the hotels suggesting that the better the quality of a hotel, the better the environmental management performance. Suggestions are made towards improvement in waste management and voluntary environmental programmes in small and medium hotels that did not perform well in those areas of environmental management Copyright © 2013 John Wiley & Sons, Ltd.

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INTRODUCTION

Accommodation being the largest sub-sector of the tourism industry undeniably has the widest impacts on the environment (Graci, 2010). However, the impacts of the accommodation sub-sector on the environment have mostly been in the areas of energy consumption (Chan and Lam, 2003; Khemiri and Hassairi, 2005; Önüt and Soner, 2006; Ali *et al.*, 2008); water consumption (Deng and Burnett, 2002; Bohanowicz, 2006); solid and liquid waste generation and disposal (Chan and Lam, 2001; Wie and Shanklin, 2001); and emission of hazardous chemicals and atmospheric pollution (Briguglio and Briguglio, 1996; Chan and Lam, 2002).

In view of these environmental impacts, coupled with rising green consumerism and concerns about climate change, pressure has been mounting on hotels to adopt more environmentally friendly and sustainable tourism practices. Many hotels, mostly in the developed world, have yielded to these calls and are embarking on various environmental management programmes and activities. Hotel companies have been involved in the formulation and implementation of environmental policies and programmes leading to pollution prevention, waste minimization, climate change mitigation, environmental health risk minimization, cost savings, market positioning and improvement in the well-being of host communities among other ends.

Apart from existing legal and regulatory frameworks in most countries, which enjoin hotels to institute environmental management in compliance with environmental laws and legislation, voluntary environmental management initiatives have also gained popularity. A milestone in the evolution of voluntary environmental management programmes in the hotel industry was in 1994, when the World Travel and Tourism Council established Green Globe, a benchmarking environmental certification programme based on the principles of Agenda 21 for the tourism industry. There have since been

other environmental initiatives by the International Hotels Environment Initiative, Caribbean Alliance for Sustainable Tourism and Asian Pacific Hotels Environment Initiative. Such initiatives have been on the national, regional and international levels. At the corporate level, specific environmental initiatives such as Hilton's 'We Care', Accor's 'Earth Guest', Kimpton's 'EarthCare' and Fairmont's 'Green Partnership' are worthy of mention. Hotel companies are also increasingly subscribing to eco-labelling and certification schemes (Hamele, 2004). According to Ernst and Young (2008), hotel companies have been influenced by energy costs, governmental pressure, customers' expectations and competition to make sustainability a top priority. The literature is replete with information on the environmental and sustainable tourism initiatives and practices of mainly multinational and large hotels in Europe, America and Asia. Within the literature, there is overwhelming evidence that larger hotels are more committed to environmental management (Buckley and Araujo, 1997; Pigram and Wahab, 1997; Cespedes-Lorente and De Burgos-Jimenez, 2003).

Environmental management practices of hotels have evolved from water and energy conservation to include voluntary environmental programmes such as eco-labelling and Environmental Management Systems (EMS). There is also growing research interest on environmental management and environmental performance of hotels. Specifically, some studies have looked at environmental management practices of hotels (Enz and Siguaw, 1999; Mensah, 2006; Erdogan and Baris, 2007), environmental performance of hotels (Leslie, 2007; Erdogan and Tosun, 2009; Chen and Hsieh, 2011) and managers' environmental attitudes (Kirk, 1998; Bohdanowicz, 2005a, 2005b; Park *et al.*, 2012). Although some previous studies have shown that class of hotel has a significant influence on environmental management of hotels (Alvarez-Gil *et al.*, 2001; Dewhurst and Thomas, 2003; Bohdanowicz, 2005a, 2005b; Erdogan and Baris, 2007), these studies have not considered the full complement of environmental management practices of hotels as well as the specific areas of environmental management practices where significant differences exist between different categories of hotels.

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This study therefore sought to assess the environmental management practices of hotels in Accra and examine differences in environmental management practices among the different categories of hotels in 10 areas of environmental management. The 10 areas of environmental management were based on both voluntary and compliance-driven environmental management as well as best practices in environmental management in hotels. This was to provide greater insights into the environmental management of hotels, which will add to existing knowledge and help improve environmental management practices in hotels.

LITERATURE REVIEW

Environmental management practices of hotels

The literature is replete with diverse environmental management practices by hotels in the areas of policy formulation, systems, compliance and voluntary programmes. However, most of the environmental management practices of hotels mentioned in the literature are those geared towards cost saving, namely water and energy conservation, waste management and recycling (Forte, 1994; Withiam, 1995; Knowles *et al.*, 1999; Gonzalez and Leon, 2001; Mensah, 2006). Undeniably, hotels can make substantial cost savings when they properly manage waste or recycle waste (Enz and Siguaw, 1999; PA Consulting Group, 2001) or practice water and energy conservation (Tzschentke *et al.*, 2004). Furthermore, green purchasing policies and practices have been identified as one of the means by which hotels can reduce operational costs (IHRA, UNEP and EUHOFA, 2001). Through green purchasing practices, an organization can address issues such as waste reduction, material substitution through environmental sourcing of raw materials and minimization of hazardous waste materials (Rao and Holt, 2005). In a survey of Macau hotels, 59% of respondents indicated that they had incorporated green considerations in their procurement specifications (Environmental Council, 2005). However, in their study of the environmental protection programmes and conservation practices of hotels in Ankara, Turkey, Erdogan and Baris (2007) found that the hotels paid little attention to environmental considerations and mostly failed to meet the basic requirements of an environmentally sensitive purchasing policy.

Generally, the development of a written environmental policy is considered as the first step in the environmental management process (Kirk, 1995). The environmental policy of a hotel then becomes the basis for all other environmental activities such as environmental auditing, reviews and monitoring (Forte, 1994). Hotels also have to succumb to environmental regulations by government by subscribing to the necessary certificates, licenses and permits. In the view of Rivera (2004), such mandatory environmental regulations, together with monitoring and explicit penalties for non-compliance, have proven to be effective mechanisms for compelling businesses to improve their environmental performance.

However, hotels are now going beyond compliance to environmental regulations and undertaking voluntary

environmental activities such as the institution of EMS, environmental auditing, eco-labelling and certification. EMS leads to enhanced corporate environmental performance (Curkovic *et al.*, 1997). In view of this, hotels and resorts around the world are currently adopting EMSs to improve resource-use efficiency, reduce operating costs, increase staff involvement and guest awareness, and gain international recognition in the travel and tourism marketplace (Meade and Pringle, 2001). Eco-labelling is another voluntary environmental management programme that is gaining popularity especially in the accommodation sector. In fact, most of the existing eco-labels and award schemes are geared towards accommodation facilities in general and hotel companies in particular (WTO, 2002). According to Font and Bendell (2002), 68% of eco-labels in the tourism industry are awarded to the accommodation sector. In 1999 and 2000 alone, over 2000 hotels, campsites, hostels and restaurants in Europe were certified and awarded eco-labels (Hamele, 2004).

Environmental management practices in the hotel industry have also included green marketing. According to Polonsky (1994), green marketing is not new to the hotel industry since resorts around the world are promoted as eco-tourist facilities that specialize in providing guests with an experience of nature or operating in a way that minimize their environmental impact.

Hotels have also instituted environmental education programmes to influence the behaviour of guests through the promotion of responsible environmental behaviour (Leslie, 2007). Although there is a paucity of data on the extent to which hotels are engaged in environmental education, there are instances of good practices in the literature. Guest environmental education programmes have also been identified among the best hotel environmental practices undertaken by hotels such as Hyatt Regency and Colony Hotel (Enz and Siguaw, 1999). Also, a decade of ecological education and training as part of the 'environmental dialogue' programme at Scandic Hotels in Sweden resulted in significant reduction in resource consumption (Bohdanowicz *et al.*, 2004).

There have also been initiatives and practices aimed at minimizing environmental health risks associated with stay in hotels. Ashley *et al.* (2006) reported of a reduction in the incidence rates of traveller's diarrhoea by 72% between 1996 and 2002 in Jamaica as a result of an initiative by the Jamaican Ministry of Health to improve the environmental health and food safety standards of hotels.

There is also the recognition that hotels need to support the local community in which they are located, as part of their corporate social responsibility (CSR). A study by McGehee *et al.* (2009) indicated that the US lodging industry injected over \$815m representing 3.5% of their profits into their communities in 2005.

Environmental management and type of hotel

The degree of involvement in environmental management by hotels depends on the size of hotel (Buckley and Araujo, 1997; Pigram and Wahab, 1997; Mowforth and Munt, 1998); affiliation to multinationals (Bohdanowicz, 2005b; Rivera, 2004); and class of hotel (Alvarez-Gil *et al.*, 2001; Bohdanowicz, 2005a; Erdogan and Baris, 2007).

Generally, larger companies are more proactive towards environmental management because they have more visible environmental impacts (Henriques and Sadorsky, 1999); are more endowed with resources to invest in environmental protection (Sharma and Vredenburg, 1998); enjoy economies of scale in the re-use, recycling or valuation of waste (Andersen, 1997); receive stronger pressures to embark on environmental management from various stakeholders; and are more sensitive to reputation damages (Branzei *et al.*, 2002). Large hotel firms also tend to have idle resources, adopt a more formal approach to environmental management and enjoy economies of scale on the use of wastes (Cespedes-Lorente *et al.*, 2003). Small hotels on the other hand are less committed to environmental management because they do not have the capital resources or internal structural arrangements for effective environmental management (Mowforth and Munt, 1998). Also, they generally view themselves as placing little burdens on the environment to warrant incorporating environmental practices into their day-to-day operations (Edwards, 2000). Moreover, managers of small and medium hotels generally lack clear and adequate knowledge about environmental management beyond the basic common sense of cutting their water and energy costs although there is the tendency for them to provide positive responses to Likert scale questions during surveys, in order to sound 'politically correct' on environmental issues (Kasim, 2009).

Also, there seems to be non-compliance to environmental laws by smaller facilities. Ignorance of environmental laws by managers of small hotels partly accounts for their non-compliance. A survey of 363 small hotel and restaurant operators in the UK revealed that 89% could not identify any piece of environmental legislation unprompted (Environmental Regulations Online, 2009). A study by Fletcher *et al.* (2009) in Jamaica found out that staff of larger hotels was significantly more knowledgeable in Hazard Analysis and Critical Control Paths and food safety procedures than their counterparts in smaller hotels.

Also, the implementation of EMS is a challenge for small and medium enterprises because small businesses often lack the resources and expertise to formulate environmental policies and run effective management and auditing systems (Hillary, 2004). The results of a survey of small and medium hotels in the UK revealed that none of the hotels in the study had implemented an EMS (Price, 2001). Also, Chan (2011), in a study of small medium hotels in Hong Kong, discovered that only 10.7% of respondents indicated that they had EMS in place in their hotels. Lack of a sense of urgency, ambiguity of EMS standards, lack of qualified verifiers/consultants, conflicting guidance and inconsistent support were identified as some of the barriers to EMS adoption in the small medium hotels in Hong Kong.

Sasidharan *et al.* (2002) are also concerned that tourism eco-labelling schemes are confronted with the problem of greater participation by large-scale enterprises and lesser participation by small-scale businesses. Unfortunately, it is these small-scale businesses that dominate the tourism industry; yet, they are incapable of meeting the strict criteria and standards set by eco-labelling schemes, mainly as a result

of the lack of financial capacity to operate environmentally friendly tourism enterprises (Sasidharan *et al.*, 2002).

The CSR in the hospitality industry was spearheaded by large hotel corporations (Kasim, 2004). Small and medium enterprises are generally seen to emphasize economic imperatives rather than social goals, mainly due to their survival strategy and their relatively limited financial resources (Munasinghe and Malkumari, 2012). A study by Garay and Font (2012) on small and medium accommodation enterprises in Catalonia, Spain, also showed correlations between sustainability practices and financial health of the establishments. However, Font *et al.* (2012) found out in a related study that although larger hotel groups had more comprehensive CSR policies, they had greater gaps in the implementation of such policies, whereas smaller hotels delivered on their promises. Also, a study by El Dief and Font (2012) did not establish any significant relationship between size of hotel and environmental practices.

Chain affiliation is also considered as having an influence on environmental management by hotels. Most of the reasons given for environmental management by larger hotels also apply to chain-affiliated hotels. Chain-affiliated hotels tend to be environmentally proactive due to the imposition of environmental standards and norms by their parent companies (Carmona-Moreno *et al.*, 2004). Also, they are often subjected to higher social and environmental standards than national companies, because they face additional pressures from stakeholders from foreign countries (Zyglidopoulos, 2002).

In a study of European hoteliers, Bohdanowicz (2005b) discovered that those representing chain establishments exhibited more knowledge in eco-friendly initiatives than their counterparts from independent establishments. Bohdanowicz (2005a) further discovered that chain-affiliated hotels such as Sheraton, Hilton and Accor were more proactive in the formulation of environmental policy than independent ones. El Dief and Font (2010) are also of the view that it is only a few successful marketing managers, mainly from leading hotel chains in Western Europe and North America, who have realized the value of green marketing as a tool to position their companies in the market, differentiate their products and services, and improve relationships with their environmental stakeholders. Moreover, multinational hotels such as Marriott, Accor International, Club Méditerranéan, Fairmont Hotels & Resorts, Radisson SAS, Hilton International and Inter-Continental Hotels Group have been at the forefront of CSR (Bohdanowicz and Zientara, 2008).

Just like size and affiliation, the higher the class and size of a hotel, the greater the amount of resources at its disposal and hence its ability to undertake environmental management (Alvarez Gil *et al.*, 2001; Rivera, 2004). This is because higher class hotels tend to be large and affiliated to multinational companies. Although the higher the star rating of a hotel, the greater the ecological footprint and environmental impacts (Chen and Hsieh, 2011), there is also evidence to suggest that higher class hotels are more committed to environmental management (Bohdanowicz, 2005a). However, Erdogan and Tosun (2009), in their study on the

environmental performance of accommodation facilities in the Goreme National Park in Turkey, did not establish a link between environmental performance and the quality of accommodation establishments.

Hypothesis

From the foregoing, it is hypothesized that hotels with higher star designation are more involved in environmental management than those with lower or no star designation.

METHOD

Sample

The population for this study comprised all general managers of all categories of hotels in Accra as of December 2009. The stratified random sampling procedure was used to select a total of 243 hotels from the various categories. This was to allow all sub-groups within the population to be represented in the sample. The basis of the stratification was therefore class of hotels. The sample was drawn on the basis of the four steps outlined by Sarantakos (2005). First, the target population was divided into six strata on the basis of the classifications of hotels by the Ghana Tourist Board (GTB) (i.e. budget and five star). Second, the sample frame for each stratum was extracted from the sample frame that was the GTB list of hotels for 2009.

Third, the sample size for each stratum was allocated to ensure that each class of hotel was adequately represented in the sample. In view of this, all hotels in the three-star, four-star and five-star categories were included in the sample due to the relatively small size of their population. Fourth, hotels were randomly selected from the sample frame for each stratum by using random numbers generated from random numbers table. Finally, the individual samples from each stratum were put together to constitute the sample size for the study.

Data collection and analysis

This study formed part of a larger study on the environmental performance of hotels in Accra. A pre-test was undertaken from May 24 to 29 in Cape Coast, a popular tourist destination in the Central Region of Ghana to ensure the instruments were more relevant and appropriate as well as to ensure content validity of the instrument for the actual data collection. The major issues identified with the questionnaires during the pre-test were inadequate response sets and improper structuring and wording of questions. The instrument was subsequently revised on the basis of the experiences from the pre-test. Fieldwork was undertaken from 1 June to 8 August 2010 in Accra. Due to the low response rates associated with mail questionnaires (Dillman, 2000), personal calls were made to the premises of sampled hotels, where questionnaires were presented to managers. Personal persuasion was used to encourage managers to take part in the study. However, where managers were uncooperative, the substitution sampling method was employed; a hotel of a similar class was randomly sampled from the list of hotels and the manager contacted. A semi-structured questionnaire

containing both close-ended and open-ended questions was employed. The questionnaires were self-administered. Calls were made to the premises of sampled hotels, where questionnaires were presented to managers. The purpose of the research was explained to them, after which those who accepted to partake in the study were allowed to complete the questionnaires on their own. The questionnaire elicited information on the socio-demographic characteristics of hotel managers and characteristics of the hotels such as location, number of employees, ownership, class and environmental management practices. Environmental management was based on a set of 33 indicators in 10 areas of environmental management practices. The indicators were derived from the available literature on environmental management practices of hotels. A six-point scale ranging from 1 (never) to 6 (very frequently) was used to assess environmental management practices of the hotels. The items on the scale were subjected to reliability analysis. The Cronbach alpha value of (0.911) was well above the limit of 0.70 required for the internal consistency of the constructs (Nunnally, 1978).

A total of 209 of the completed questionnaires were returned from the field, but 200 were considered useful for the analysis. The response rate of a survey is critical to the quality of the data. In this survey, although 243 hotels were sampled, 200 questionnaires were considered appropriate, representing a response rate of 82.3%. The data collected from the field were edited, coded and processed using SPSS version 16. Hypothesis was tested using analysis of variance (ANOVA) with Bonferoni *post hoc* tests.

DISCUSSION OF FINDINGS

Organizational characteristics of hotels

Table 1 shows that 94.4% of the hotels studied were independent. Only 11.6% were affiliated to foreign multinational companies in the form of franchises, management contract or joint ventures. This appears to be the situation in most developing countries as Rivera (2004) in a study on hotels in Costa Rica also found 93.90% of the hotels were not affiliated. In terms of ownership structure of the hotels, only 6.1% were either owned entirely by foreigners or had foreign equity participation. The majority (93.9%) of the hotels were entirely owned by Ghanaians. They were also predominantly (71.2%) sole proprietorship businesses, with more than half (54%) being owner managed.

Of the total of 583 hotels in the study area, only 12 (2%) were in the three-star to five-star category. It was therefore not surprising that more than two-thirds (67.3%) of the hotels had less than 20 guest rooms, with 66.3% having between 10 and 39 rooms. Only 4% had 100 or more rooms. The average number of guest rooms was 23.84. This lends credence to the assertions by Stabler and Goodall (1997) that the hospitality sector is fragmented, consisting of relatively small units. However, the situation seems different in western countries. In Bohdanowicz's (2005a) study on European hotels, the average number of guest rooms was 110.4.

Moreover, 53.1% of the hotels employed less than 10 people with only 4.6% employing more than 100 people.

Table 1. Organizational characteristics of hotels

Characteristic	Frequency	Percent
Management Arrangement		
Independent	187	94.4
Affiliated	11	5.6
Total	198	100
Type of ownership		
Entirely local ownership	185	93.9
Foreign ownership/participation	12	6.1
Total	197	100
Number of guest rooms		
Less than 10	46	23.1
10–39	132	66.3
40–69	9	4.5
70–99	4	2.0
100 and above	8	4.0
Total	199	100
<i>Mean = 23.84; Mode = 10</i>		
Number of employees		
Less than 10	104	53.1
10–39	72	36.7
40–69	6	3.1
70–99	5	2.6
100 and above	9	4.6
Total	196	100
<i>Mean = 21.80; Mode = 10</i>		
Occupancy		
50% or less	41	22.0
51–70%	115	61.8
71–90%	27	14.5
More than 90%	3	1.6
Total	186	100
Membership of GHA*		
Member	155	77.5
Non-member	45	22.5
Total	200	100

*GHA is Ghana Hotels Association, a trade association of hotels in Ghana.

Only 1.6% of the hotels had more than 90% occupancy. More than three-quarters (77.5%) of the hotels were members of the Ghana Hotels Association.

Table 2. Classification of hotel and organizational characteristics

Organizational characteristics	Class of hotel (%)				N	χ^2	p
	Budget	Guest house	1–2 star	3–4 star			
Type of ownership							
Entirely local	97.6	97.4	93.8	50.0	185	36.577	0.001
Foreign	2.4	2.6	6.3	50.0	12		
Total	100.0	100.0	100.0	100.0	197		
Affiliation							
Independent	97.6	100.0	96.9	36.4	187	75.361	0.001
Affiliated	2.4	0.0	3.1	63.6	11		
Total	100.0	100.0	100.0	100.0	198		
Number of guest rooms							
Less than 20	78.6	90.2	49.2	0.0	134	158.814	0.001
20–59	21.4	9.8	44.4	9.1	51		
60–99	0.0	0.0	4.8	27.3	6		
100 or more	0.0	0.0	1.6	63.6	8		
Total	100.0	100.0	100.0	100.0	199		
Number of employees							
Less than 20	96.4	97.5	64.5	9.1	160	161.403	0.001
20–59	3.6	0.0	27.4	9.1	21		
60–99	0.0	2.5	6.5	9.1	6		
100 or more	0.0	0.0	1.6	72.7	9		
Total	100.0	100.0	100.0	100.0	196		

Hotel classification and organizational characteristics

Results of chi-square test of the relationships between hotel classification and organizational characteristics showed significant relationships existed between class of hotel and type of ownership, affiliation, number of guest rooms and number of employees all at the $p < 0.05$ significance level as shown in Table 2. Hotels with higher star rating were more likely to be partially or fully owned by foreigners. Half (50%) of the three-star to four-star hotels had foreign ownership.

On the other hand, 97.6% of the budget hotels were entirely owned by Ghanaians. Also, almost all hotels ranging from budget to two-star were independent. However, nearly two-thirds (63.6%) of hotels in the three-star to four-star category were affiliated to multinationals. Generally, number of rooms and employees increased with star designation implying that higher class hotels were larger. The guest houses had the least number of rooms since 90.2% had less than 20 rooms, whereas a greater proportion of the three-star to four-star hotels (63.6%) had 100 or more rooms. Also, 96% of budget hotels had less than 20 employees, whereas 72.7% of the 3–4 star hotels had 100 or more employees. In effect, high-class hotels (three-star to four-star) were more affiliated to multinational companies, owned by foreigners and larger.

Environmental management practices among different categories of hotels

The three-star to four-star hotels had the best performance in environmental management practices (total mean = 4.63) followed by one-star to two-star hotels (total mean = 3.84) and then budget hotels and guest houses of which both had a total mean of 3.34 as shown in Table 3. Collectively, the hotels performed creditably in terms of environmental health and pollution prevention (category mean = 4.58), in their support for local communities (category mean = 4.23) and in green purchasing (category mean = 4.21). However, they performed poorly in the areas of voluntary environmental

Table 3. Mean distributions of environmental management practices

Environmental performance indicators	Mean					Std. dev.
	Budget	Guest house	1–2 star	3–4 star	Total mean	
Compliance with legislation and by-laws						
Acquisition of environmental permit from the EPA	3.30	3.10	3.70	5.45	3.51	1.73
Submission of Environmental Impact Statement to EPA	2.40	2.32	2.88	5.27	2.70	1.60
Submission of EMP to the EPA	2.38	2.15	2.86	4.45	2.60	1.54
Acquisition of health permit from the AMA	3.94	3.54	4.44	5.89	4.08	1.56
Category mean	3.01	2.78	3.47	5.07	3.22	1.61
Conservation projects						
Cash or kind contribution towards conservation project	3.04	2.71	3.36	4.00	3.13	1.47
Use of energy-efficient equipment and products	4.50	4.34	4.61	5.64	4.57	1.15
Installation of water-efficient devices and equipment	4.20	4.10	4.33	5.45	4.29	1.37
Category mean	3.91	3.72	4.10	5.03	4.00	1.33
Eco-labelling and certification						
Certification by an eco-label or certification scheme	2.57	2.56	3.14	4.36	2.85	1.79
Acquisition of ISO 14001 certification	1.46	1.44	2.17	3.54	1.80	1.39
Category mean	2.02	2.00	2.66	3.95	2.33	1.59
Environmental auditing						
Periodic internal environmental audit	3.04	3.02	3.63	4.55	3.31	1.65
ISO 14010 or external environmental audits	1.48	1.76	2.52	3.73	1.99	1.47
Category mean	2.26	2.39	3.08	3.95	2.65	1.56
Environmental education and communication						
Guests information about environmental activities/policies	3.79	3.90	4.08	4.45	3.94	1.48
Guests education on eco-friendly practices	3.71	3.68	3.77	4.27	3.76	1.58
Staff education on eco-friendly practices	3.99	4.12	4.05	4.64	4.07	1.43
Category mean	3.83	3.90	3.97	4.45	3.92	1.49
Environmental health and pollution prevention						
Use of ozone-friendly detergents and equipments	4.14	4.24	4.63	5.45	4.39	1.32
Enforcement of no smoking in public areas	3.94	4.41	4.80	5.64	4.41	1.71
Measures to ensure sanitation and food safety	4.61	4.73	5.38	5.82	4.95	1.26
Category mean	4.23	4.46	4.94	5.64	4.58	1.43
Green marketing						
Modification of operations to reduce impacts	3.67	3.66	4.41	4.73	3.96	1.34
Provision of accurate information to guests	4.11	4.07	4.77	4.82	4.35	1.26
Production of brochures and publicity material using recycled paper	2.83	2.66	3.25	3.36	2.96	1.69
Category mean	3.54	3.46	4.14	4.30	3.76	1.43
Green purchasing						
Purchases from local sources	4.61	4.56	4.95	5.27	4.75	1.11
Purchase of eco-friendly materials and/or detergents	3.86	4.05	4.22	5.27	4.09	1.46
Prescription of environmental standards for suppliers	3.27	3.07	4.09	5.27	3.61	1.60
Bulk purchasing of supplies	4.19	4.05	4.63	5.45	4.37	1.33
Category mean	3.98	3.93	4.47	5.32	4.21	1.38
Support for local communities						
Use of local materials	4.44	4.29	4.62	5.27	4.52	1.14
Employment of people from local community	4.65	4.83	5.05	5.27	4.85	1.24
Promotion of local traditional culture	4.11	3.83	4.53	4.64	4.22	1.38
Improvement of the lives of local residents by ploughing back profit	2.99	3.10	3.77	4.27	3.33	1.60
Category mean	3.98	4.01	4.49	4.86	4.23	1.34
Waste management and recycling						
Reuse papers, crates, bottles, cans and plastic materials	3.01	2.83	3.03	3.64	3.02	1.61
Implementation of recycling program	2.00	2.15	2.55	3.36	2.28	1.40
Composting of waste	2.00	2.07	2.55	4.18	2.31	1.52
Sorting of waste into paper, glass, plastic, etc.	2.17	2.73	2.83	3.45	2.57	1.67
Implementation of a linen and towel reuse program	3.89	3.76	4.44	3.91	4.04	1.72
Category mean	2.61	2.71	3.08	3.71	2.84	1.58
Total mean	3.34	3.34	3.84	4.63	3.57	1.47

Note: Based on a 6-point scale ranging from 1 (never) to 6 (very frequently).

EPA, Environmental Protection Agency; EMP, Environmental Management Programmes; AMA, American Medical Association.

initiatives such as eco-labelling and certification (category mean=2.33) and in environmental auditing (category mean=2.65), which they hardly undertook. In terms of compliance with environmental legislation and by-laws, the three-star to four-star hotels were more compliant since they frequently fulfilled such legal obligations (category

mean=5.07) as compared with the lowly rated hotels that hardly undertook such obligations.

This confirms the findings of Caterersearch (2008) and Environmental Regulations Online (2009), which suggested that small-sized to medium-sized hotels were less compliant to environmental legislation. The compliance by the upscale

hotels could be attributed to the fact that they tend to receive stronger pressures for environmental management from various stakeholders and are more sensitive to reputation damage (Branzei *et al.*, 2002). The upscale hotels are also prime targets of government environmental agencies, and there is therefore a greater tendency for them to comply with government environmental laws to protect their reputations.

The guest houses and budget hotels did not perform well enough regarding their submission of Environmental Impact Statements and Environmental Management Programmes (EMPs) to the Environmental Protection Agency (EPA), which obligation they very rarely fulfilled. This could be partly explained by the fact that the law does not oblige some of them. In fact, the EPA exempts hotels with less than 40 rooms from submitting environmental impact assessments and EMPs. Eco-labelling and certification is very rare in budget hotels (category mean = 2.02) and one-star to two-star hotels (category mean = 2.00). Even for upscale hotels (three-star to four-star), one of their worst performances was in eco-labelling and certification (category mean = 3.95). They equally performed badly in the area of environmental auditing, especially with regard to undertaking ISO 14010 or external environmental audits, where the mean for budget hotels was 1.48, whereas that of three-star to four-star hotels was 3.73.

Although compliance enforcement is an important tool for enhancing the environmental management of businesses (Michaelis, 2003; Rivera, 2004), the overall performance of the hotels in this area (category mean = 3.22) meant that the hotels hardly complied with environmental laws and legislation, especially in the submission of EMPs to the EPA (total mean = 2.60). However, acquisition of health permit from the

Accra Metropolitan Assembly, although occasionally undertaken (total mean = 4.08), was the best performance in the area of compliance with environmental legislation and laws.

Conservation of water and energy was one areas that the hotels performed relatively better (category mean = 4.00). The best performance in this area was in the use of energy-efficient equipment and products (total mean = 4.57) followed by installation of water-efficient devices and equipment (total mean = 4.29), probably due to the fact that substantial cost savings could be made by hotels if water and energy conservation was practiced (Tzschentke *et al.*, 2004).

Overall, the worst performance of the hotels was in the area of voluntary environmental programmes such as eco-labelling and certification (category mean = 2.33) as well as environmental auditing (category mean = 2.65). The practice of being certified by an eco-label scheme was hardly undertaken by hotels in Accra (total mean = 2.85). But this is not surprising since there are currently no home-grown eco-labels or certification schemes operating in the hospitality industry in Ghana although there are over a hundred eco-labels in the industry worldwide (Font, 2001) and the practice continues to gain popularity in Europe (Hamele, 2004). Also the acquisition of ISO 14001 by hotels in Ghana was almost non-existent (total mean = 1.80).

The hotels occasionally provided environmental education to guests and staff (category mean = 3.92). They were however more attuned to environmental education of staff (total mean = 4.07) than guests (total mean = 3.76) even though the education of guests is seen as playing a more crucial role in the achievement of environmental targets due to the unstable staffing situation in especially seasonal hotels (Anguera *et al.*, 2000).

Table 4. Analysis of variance for indicators of environmental management

Environmental performance indicator	Sum of squares	df	Mean squares	F	Sig.
Acquisition of environmental permit from the EPA	54.739	3	18.246	6.607	0.000
Submission of Environmental Impact Statement to EPA	88.097	3	29.366	13.629	0.000
Submission of Environmental Management Plan to the EPA	54.607	3	18.202	8.589	0.000
Acquisition of health permit from the AMA	33.163	3	11.054	4.820	0.003
Cash or kind contribution towards conservation project	19.760	3	6.587	3.163	0.026
Use of energy-efficient equipments and products	15.156	3	5.052	4.025	0.008
Installation of water-efficient devices and equipment	17.174	3	5.725	3.134	0.027
Certification by an eco-label or certification scheme	40.551	3	13.517	4.438	0.005
Acquisition of ISO 14001 certification	57.173	3	19.058	11.359	0.000
Periodic internal environmental audit	32.799	3	10.933	4.205	0.007
ISO 14010 or external environmental audits	75.300	3	25.100	13.793	0.000
Use of ozone-friendly detergents and equipments	22.006	3	7.335	4.416	0.005
Enforcement of no smoking in public areas	44.637	3	14.879	5.405	0.001
Measures to ensure sanitation and food safety	31.674	3	10.558	7.320	0.000
Modification of operations to reduce environmental impacts	30.175	3	10.058	6.056	0.001
Provision of accurate information to guests and the public	21.563	3	7.188	4.760	0.003
Purchase of eco-friendly materials and/or detergents	21.073	3	7.024	3.431	0.018
Prescription of environmental standards for suppliers	66.693	3	22.231	9.878	0.000
Bulk purchasing of supplies	24.038	3	8.013	4.751	0.003
Promotion of local traditional culture	15.431	3	5.144	2.783	0.042
Improvement of the lives of local residents by ploughing back profit	33.956	3	11.319	4.639	0.004
Implementation of recycling programme	24.793	3	8.264	4.407	0.005
Composting of waste	52.504	3	17.501	8.361	0.000
Sorting of waste into paper, glass, plastic, etc.	27.603	3	9.201	3.431	0.018

Note: Only indicators with significant differences are presented.
EPA, Environmental Protection Agency; AMA, American Medical Association.

Table 5. Tukey Honestly Significant Difference *post hoc* comparisons of environmental management practices of hotel categories

Environmental performance indicators	Hotels		<i>I</i> -group	<i>J</i> -group	Mean difference (<i>I</i> – <i>J</i>)	Sig.
	Class	Mean				
Acquisition of environmental permit from the EPA	Budget	3.30	3–4 star	Budget	2.16	0.000
	Guest house	3.10	3–4 star	Guest house	2.36	0.000
	1–2 star	3.70	3–4 star	1–2 star	1.75	0.008
	3–4 star	5.45				
Submission of Environmental Impact Statement to EPA	Budget	2.40	3–4 star	Budget	2.87	0.000
	Guest house	2.32	3–4 star	Guest house	2.96	0.000
	1–2 star	2.88	3–4 star	1–2 star	2.40	0.000
	3–4 star	5.27				
Submission of EMP to the EPA	Budget	2.38	3–4 star	Budget	2.07	0.000
	Guest house	2.15	3–4 star	Guest house	2.31	0.000
	1–2 star	2.86	3–4 star	1–2 star	1.60	0.005
	3–4 star	4.45				
Acquisition of health permit from the AMA	Budget	3.94	1–2 star	Guest house	0.90	0.017
	Guest house	3.54	3–4 star	Guest house	1.55	0.015
	1–2 star	4.44				
	3–4 star	5.09				
Cash or kind contribution towards conservation project	Budget	3.04	3–4 star	Guest house	1.29	0.044
	Guest house	2.71				
	1–2 star	3.36				
	3–4 star	4.00				
Use of energy-efficient equipment and products	Budget	4.50	3–4 star	Budget	1.14	0.010
	Guest house	4.34	3–4 star	Guest house	1.29	0.004
	1–2 star	4.61				
	3–4 star	5.64				
Installation of water-efficient devices and equipment			3–4 star	1–2 star	1.02	0.028
	Budget	4.20	3–4 star	Budget	1.25	0.022
	Guest house	4.10	3–4 star	Guest house	1.35	0.018
	1–2 star	4.33				
Certification by an eco-label or certification scheme	3–4 star	5.45				
	Budget	2.57	3–4 star	Budget	1.79	0.009
	Guest house	2.56	3–4 star	Guest house	1.80	0.014
	1–2 star	3.14				
Acquisition of ISO 14001 certification	3–4 star	4.36				
	Budget	1.46	1–2 star	Budget	0.71	0.006
	Guest house	1.44	1–2 star	Guest house	0.73	0.026
	1–2 star	2.17	3–4 star	Budget	2.08	0.000
Periodic internal environmental audit	3–4 star	3.55	3–4 star	Guest house	2.10	0.000
	Budget	3.04	3–4 star	1–2 star	1.37	0.007
	Guest house	3.02	3–4 star	Budget	1.51	0.020
	1–2 star	3.63		Guest house	1.52	0.030
ISO 14010 or external environmental audits	3–4 star	4.55				
	Budget	1.48	1–2 star	Budget	1.04	0.000
	Guest house	1.76	1–2 star	Guest house	0.76	0.027
	1–2 star	2.52	3–4 star	Budget	2.25	0.000
Use of ozone-friendly detergents and equipments	3–4 star	3.72	3–4 star	Guest house	1.97	0.000
	Budget	4.14	3–4 star	1–2 star	1.21	0.033
	Guest house	4.24	3–4 star	Budget	0.41	0.009
	1–2 star	4.63		Guest house	0.43	0.031
Enforcement of no smoking in public areas	3–4 star	5.45				
	Budget	3.94	1–2 star	Budget	0.86	0.011
	Guest house	4.41	3–4 star	Budget	1.70	0.009
	1–2 star	4.80				
Measures to ensure sanitation and food safety	3–4 star	5.64				
	Budget	4.61	1–2 star	Budget	0.77	0.001
	Guest house	4.73	1–2 star	Guest house	0.64	0.040
	1–2 star	5.38	3–4 star	Budget	1.21	0.010
Modification of operations to reduce impacts	3–4 star	5.82	3–4 star	Guest house	1.09	0.041
	Budget	3.67	1–2 star	Budget	0.74	0.004
	Guest house	3.66	1–2 star	Guest house	0.75	0.021
	1–2 star	4.41				
	3–4 star	4.73				

(Continues)

Table 5. (Continued)

Environmental performance indicators	Hotels			Mean difference (I - J)	Sig.	
	Class	Mean	I-group			J-group
Provision of accurate information to guests	Budget	4.11	1-2 star	Budget	0.66	0.008
	Guest house	4.07	1-2 star	Guest house	0.69	0.027
	1-2 star	4.77				
	3-4 star	4.82				
Purchase of eco-friendly materials and/or detergents	Budget	3.86	3-4 star	Budget	1.42	0.012
	Guest house	4.05				
	1-2 star	4.22				
	3-4 star	5.27				
Prescription of environmental standards for suppliers	Budget	3.27	1-2 star	Budget	0.82	0.006
	Guest house	3.07	1-2 star	Guest house	1.02	0.004
	1-2 star	4.09	3-4 star	Budget	2.00	0.000
	3-4 star	5.27	3-4 star	Guest house	2.20	0.000
Bulk purchasing of supplies	Budget	4.20	3-4 star	Budget	1.26	0.014
	Guest house	4.05	3-4 star	Guest house	1.41	0.009
	1-2 star	4.63				
	3-4 star	5.45				
Improvement of the lives of local residents by ploughing back profit	Budget	2.99	1-2 star	Budget	0.78	0.016
	Guest house	3.10				
	1-2 star	3.77				
	3-4 star	4.27				
Implementation of recycling program	Budget	2.00	3-4 star	Budget	1.36	0.012
	Guest house	2.15	3-4 star	Guest house	1.22	0.047
	1-2 star	2.55				
	3-4 star	3.36				
Composting of waste	Budget	2.00	3-4 star	Budget	2.18	0.000
	Guest house	2.07	3-4 star	Guest house	2.11	0.000
	1-2 star	2.55	3-4 star	1-2 star	1.63	0.004
	3-4 star	4.18				

Note: EPA, Environmental Protection Agency; EMP, Environmental Management Programmes.

The overall best performance of the hotels was in the area of environmental health and pollution prevention (category mean = 4.58), which meant that the hotels frequently undertook activities geared towards providing healthy environment for their guests. Performance of the hotels in all the environmental health activities was high, including the institution of measures to ensure sanitation and food safety (total mean = 4.95) and enforcement of no smoking in public areas (total mean = 4.41).

In the area of green marketing, the hotels hardly produced brochures and publicity materials on recycled paper (total mean = 2.96); they nonetheless occasionally provided accurate information to guests and the general public (total mean = 4.35). However, performance of the hotels in the area of green purchasing was one of the best (category mean = 4.21). They frequently purchased their supplies in bulk (total mean = 4.37) and from local sources (total mean = 4.75) although they hardly prescribed environmental standards to guide suppliers (total mean = 3.61), suggesting that green purchasing is undertaken essentially by the hotels without the active involvement and collaboration of suppliers.

In general, the hotels appeared to be alive to their CSR of supporting the communities in which they operated in terms of frequently using local materials (category mean = 4.52), employing local people (category mean = 4.85) and promoting local culture (category mean = 4.22) although they did not consciously plough back part of their profits into the provision of social projects to improve the lives of people in communities where hotels were located.

Unfortunately, one of the worst performances of the hotels was in the area of waste management and recycling (category mean = 2.84); particularly, in the implementation of recycling programmes (total mean = 2.28), the hotels performed poorly together with composting of waste (total mean = 2.31). Indeed, the hotels hardly reused their waste (total mean = 3.02) or sorted the waste (total mean = 2.57). This means hotels in Accra mostly resorted to dumping waste at landfill sites without adding value to their wastes through practices such as reuse, recycling or composting.

Environmental management by different classes of hotels

To examine the differences in environmental management practices of the different classes of hotels and the significance of such differences, a one-way ANOVA with Tukey Honestly Significant Difference *post hoc* test was conducted. The ANOVA results showed that there were statistically significant differences ($p < 0.05$) among the different classes of hotels on 24 of the 33 environmental management indicators; $F(3, 196) = 16.14$, $p = 0.00$. The areas of environmental management where there were significant differences are presented in Table 4. The results provide support for the hypothesis that hotels with higher star designation are more involved in environmental management than those with lower or no star designation. The study provides enough evidence that the better the quality of a hotel (star rating), the greater the environmental management practices. This supports the findings of similar studies by Alvarez-Gil *et al.* (2001), Bohdanowicz (2005a) and Erdogan and Baris (2007).

From Table 5, the Tukey Honestly Significant Difference *post hoc* test indicates significant differences ($p < 0.05$) in the environmental management performance among different categories of hotels on 22 of the indicators. The three-star to four-star hotels had significantly higher mean environmental management scores on all 22 indicators than the other classes of hotels at the $p < 0.05$ level. This was followed by hotels in the one-star to two-star category, which had higher scores on all 22 indicators than budget hotels and guest houses. The budget hotels had higher environmental management scores than the guest houses on 14 of the indicators, whereas the guest houses had higher scores on the remaining eight indicators. The guest houses performed better than the budget hotels only in the areas of environmental health and waste management.

Table 5 shows significant differences in the environmental management practices of three-star to four-star hotels and budget hotels; three-star to four-star hotels and guest houses; three-star to four-star hotels and one-star to two-star hotels; one-star to two-star hotels and budget hotels; and one-star to two-star hotels and guest houses all at $p < 0.05$.

CONCLUSIONS AND RECOMMENDATIONS

Results of this study show that the highest quality hotels (three-star to four-star) were the best performers in environmental management followed by one-star to two-star hotels and then the budget and guest houses. An ANOVA indicated significant differences in the environmental management practices of the different categories of hotels on 24 of the 33 indicators. However, one major area of environmental management where there was no significant difference among the hotels was environmental education. There were also no significant differences in the performance of the various categories of hotels in terms of the following activities: production of brochures and publicity materials on recycled paper, purchases from local sources, employment of staff from local community, reuse of waste materials and implementation of a linen and towel reuse programme.

The best performance of the hotels was in the area of environmental health and pollution prevention, thus reinforcing the importance that the hotels attached to sanitation and waste management. However, their worst performance was in the area of voluntary environmental initiatives such as eco-labelling and certification and in environmental auditing. This confirms the scarcity of voluntary environmental programmes in the tourism industry in Ghana and the less participation of smaller facilities in voluntary environmental management programmes (Sasidharan *et al.*, 2002) since the bulk of hotels in the study area are small to medium.

To help enhance the environmental management performance of small and medium hotels in Ghana, government must encourage the development of voluntary environmental programmes as a policy alternative to the traditional 'command and control' approaches. Voluntary environmental programmes that have been found to be cost-effective, flexible and cooperative could be a viable policy alternative. Third-party monitoring and assessment of the environmental performance of hotels

should be encouraged since governmental institutions tasked with enforcing compliance are saddled with resource constraints that render them sometimes ineffective. At the moment, there is no single eco-label or certification programme specifically tailored for the hotel industry in Ghana although eco-labels are assuming popularity globally. Government could encourage the development of voluntary environmental programmes by providing incentives such as recognition, awards or tax reliefs to associations and organizations that develop such programmes or partake in voluntary environmental programmes.

There should be conscious effort by hotels associations such as the Ghana Hotels Association to facilitate the transfer of the experiences and best practices of large hotels to small hotels since the membership of the hotels association comprises all categories of hotels. Through the medium of seminars and workshops, managers and engineers of large hotels with good environmental record could share their experiences in environmental management with managers of small and medium hotels.

Also, the focus of waste management in small and medium hotels must change from waste collection and disposal to waste reduction, reuse and recycling since the worst performance of the hotels was in the area of waste management. Waste management in the hotels mirrors waste management at the national level, which involve the collection and disposal of waste resulting in 'mountains' of garbage that engulf cities in most developing countries. Results of this study suggest that hotels are pre-occupied with cleaning up and dumping their wastes rather than reducing the amount of waste they generate. However, it is imperative that they engage in more environmentally responsible purchasing behaviour such as buying in bulk to reduce packaging and buying bio-degradable, refillable, reusable and recyclable materials. Hotel waste must also be sorted into food, glass, paper, bottle and plastic to make it easier for reuse and recycling. Since waste recycling requires financial and technical resources that are outside the means of small and medium hotels, there is the need for collaboration between hotels, government agencies and other industries towards recycling. Designated bins for paper, cans, bottle, plastic and food could be placed at the hotels to be emptied at periodic intervals for onward transmission to manufacturing firms that could recycle them.

Furthermore, there should be a shift towards green hotel development. Green hotels are lodging facilities that remain committed to various environmentally sound programmes geared towards minimizing their impacts on the environment or minimizing their carbon and ecological footprints. Potential investors should be encouraged by government especially through incentives to develop green hotels. Green hotels are developed by putting in place structures, equipment and systems to ensure energy and water efficiency, recycling of waste, low carbon emissions and optimum use of local products. Green hotels therefore use appropriate technology such as low-flow shower heads and sink aerators, dual flush toilets and compact fluorescent lamps in order to conserve water and energy. They also use local products such as building materials, food and stationery in order to support host

communities and purchase chlorofluorocarbon-free detergents and equipment in order to reduce their carbon and ecological footprints.

Finally, this study has provided the specific areas of environmental management where significant differences exist among different categories of hotels. Future studies on environmental management in hotels should however focus on obtaining more insights into the environmental attitudes of managers of small and medium hotels and how that influences the environmental performance of their hotels. Also, the obstacles to adoption and implementation of environmental management practices by small and medium hotels need to be explored further.

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