

Environmental Education and Environmentally Responsible Behavior: The Case of International Tourists in Accra Hotels

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ABSTRACT: The success of environmental programs in hotels hinges on the environmentally responsible behavior of guests. In spite of this, the hotel guest has remained peripheral to environmental management programs and initiatives in hotels. This paper therefore examines the environmentally responsible behavior of international tourists in hotels in Accra and whether environmental education by the hotels and gender of tourists have any relationship with environmentally responsible behavior. A sample of 343 international tourists was surveyed at major tourist attraction sites in Accra. The results of the study indicates that about three-quarters of respondents were neither informed about the environmental programs being undertaken by their hotels nor educated on environmentally responsible behavior. Also, women reported greater environmentally responsible behavior than men. Hotels in Accra should therefore step up environmental education especially through travel intermediaries and use women as change agents for inculcating environmentally responsible behavior.

Keywords: Environmental education; Environmentally responsible behavior; Gender; Tourist; Hotel

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Introduction

There has been a rise in green consumerism with tourists and hotel guests demanding greater environmental responsibility from hotels and resorts at tourist destinations ([Holden, 2000](#)). This situation, coupled with pressure from governments, host communities, Non-governmental organizations (NGOs) and other stakeholders have ignited a proliferation of environmental management programs and initiatives in the hotel industry, geared towards ameliorating the environmental performance of hotels.

However, the environmental impacts of hotels, especially with regards to resource depletion and waste generation are exacerbated by their guests. For instance about 40% of water consumption in hotels occurs in guestrooms (Forte, 1994; Deng and Burnett, 2000). Also, the American Hotel and Motel Association estimates that the average hotel guest generates from 1.0 to 2.5 pounds of waste per room every day (Cartier, 2008). Similarly, Salem (1995) concluded that 15,000 cubic meters of water was consumed by 100 hotel guests in a luxury hotel for 55 days whilst the same amount of water could have served the needs of 100 rural farmers for three years. In spite of this, it appears that the hotel guest has largely been consigned to the periphery of environmental programs and initiatives undertaken by hotels. A North America Hotel Guest Satisfaction Study by J.D. Power and Associates in 2007, revealed that although nearly three-fourths of hotel guests in North America willingly participate in environmentally friendly programs offered during their stay in hotels, many of them are not made aware of the availability of such programs at the hotels (Environmental Leader, 2007). In the opinion of [Anguera et al. \(2000\)](#) due to the unstable staffing situation within seasonal hotels, hotel guests might even play a key role in achieving environmental targets. Thus, due to the high rate of labor turnover coupled with the seasonal nature of employment in such hotels, investing in the environmental education of staff may not yield as much dividends as educating guests since employees might leave as soon as they have been trained.

Thus environmental education of guests could be crucial to improvement of the environmental performance of hotels. According to Stapp (1969) as cited by North American Association for Environmental Education (2005), “Environmental education is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve the problems, and motivated to work toward their solution”. The Tbilisi Declaration of 1977 emphasized the

important role of environmental education in the preservation and improvement of the environment, as well as for the sound and balanced development of the world's communities. At the conference, governments reached a consensus that one of the goals of environmental education is to “create new patterns of behavior of individuals, groups, and society as a whole towards the environment (p.26)”. Environmental education is therefore expected to provide environmental knowledge which should lead to environmentally responsible behavior (ERB). Behavior is considered environmentally responsible when it promotes the sustainability or reduction in the use of natural resources (Sivek and Hungerford, 1990 as cited in Vaske and Kobrin, 2001).

In spite of the importance of ERB on the part of hotel guests to the realization of hotels' and destinations' environmental goals, it has not attracted much research attention. Most studies on environmentally responsible tourism and environmental education have been on ecotourists (Dolnicar and Long, 2007; Kimmel, 1999, Tisdell and Wilson, 2000). In the context of hotels, there have been a few studies specifically in relation to towel and linen reuse (Goldstein et al., 2007; Mair and Bergin-Seers, 2010; Shang et al., 2010). However, towel or linen reuse is not the only ERB guests could engage in. It is therefore imperative to look at other ERBs that could help reduce the ecological footprints of tourists and also how environmental education impacts the ERBs of tourists. This paper therefore examines the ERB of international tourists in hotels in Accra and seeks answers as to whether environmental educations by the hotels and the gender of tourists have any relationship with ERB. It is expected that this will make a meaningful contribution towards understanding the factors that influence tourists' ERB.

Literature Reviews

Theories on Environmentally Responsible Behavior

A number of theories have been propounded to explain why people will behave in an environmentally-responsible manner. Hungerford and Volk (1990) proposed a behavioral change model which was founded on the belief that educating the public on environmental issues could alter their behavior. This was based on the premise that if people were well informed on environmental issues, they would become more aware of environmental problems and as a result, would be motivated to act in an environmentally responsible manner.

However empirical studies have concluded that though knowledge of environmental problems raises people's concern for the environment, it is not sufficient to lead to an ERB (Kollmuss and Agyeman, 2002; Szerenyi et al., 2009). Thus the prediction of ERB depends on various factors that interact (Bell et al., 2001). [Hanna \(1995\)](#), drawing from Ajzen and Fishbein's (1980) Theory of Reasoned Action focused on factors preceding the adoption of ERB. According to Hanna, preceding factors (such as past experience and demographic factors) interact with an individual's knowledge and ability to act. This then contributes to the development of environmentally favorable attitudes toward relevant environmental issues that in turn lead to a reinforcement of intention to act responsibly. These intentions are then expressed through the individual's specific actions.

[Hines et al. \(1987\)](#) also developed a model of responsible environmental behavior which included cognitive knowledge and cognitive skills as important requirements for environmental behavior. They identified factors such as intention to act, prior knowledge of the problem at hand and a desire to act as more likely to lead to actual environmental action by individuals. A more comprehensive model of ERB was proposed by Kollmuss and Agyemang (2002) after reviewing previous models. They identified demographic, external and internal factors as shaping ERB. External factors included institutional, economic, social, and cultural factors while internal factors included motivation, environmental knowledge, awareness, values, attitudes, emotion, and locus of control, responsibilities, and priorities.

Environmental Education and Environmentally Responsible Behavior

The ultimate aim of environmental education is to change individual behavior towards the environment by producing environmentally literate and responsible citizens ([Knapp, 2000](#)). Thus environmental education should lead to the adoption of more responsible environmental attitudes by tourists (Orams, 1997). However, the question as to whether environmental education leads to ERB has been a subject of debate. Some have suggested that environmental knowledge is a major predictor of pro-environmental behavior ([Thapa et al., 2005](#)). [Weaver \(2002\)](#) asserted that individuals with more general knowledge about the environment may be more sympathetic to environmental problems, and thus more likely to engage in ERB than individuals with low levels of general environmental knowledge. Some studies have also revealed that knowledge does not automatically lead to environmental action or pro-

environmental behavior ([Jensen, 2002](#)). According to [Kuhlemeier et al. \(1999\)](#) there is a weak relationship between environmental knowledge and environmental attitudes and behavior, and that ERB is more strongly connected with willingness to make sacrifices than attitude. However, not much research has been conducted to establish the relationship between tourist's and hotel guests' environmental knowledge and ERB.

Gender and Environmentally Responsible Behavior

Generally, studies have shown that women report significantly higher pro-environmental behaviors than men due to their gender socialization which results in greater sensitivity toward environmental issues ([Karpiak and Baril, 2008](#); [Laroche et al., 2001](#); [Mostafa, 2007](#); [Zelezny et al., 2000](#)). [Karpiak and Baril \(2008\)](#) found out that women reported greater environmental concern and less apathy toward the environment in a study of 158 college students. Also, cultural and social-structural factors make females on the average, more aware of the interconnections between causes and effects of environmental harm, thereby being more likely to engage in pro-environmental behavior ([Hunter et al., 2004](#)). Other studies have however not established significant differences in the pro-environmental behaviors of males and females ([Clark et al., 2003](#); [Tindall et al., 2003](#)).

There is a dearth of evidence on gender differences in pro-environmental behavior of hotel guests. In a study on hotel guests' preferences for green hotel attributes, [Millar and Baloglu \(2008\)](#) discovered that preferences for green attributes were higher for females than males on eight out of 12 attributes indicating higher pro-environmental behavior on the part of females. Women had significantly greater preferences for low flow shower heads, refillable soap and shampoo dispensers, towel reuse program, change of sheets only upon request, recycling bins and occupancy sensors and key cards. [Han et al. \(2011\)](#) also found gender differences in eco-friendly intentions of US hotel guests, with females rating eco-friendly intentions more favorably.

Environmental Education and Environmentally Responsible Behavior of Tourists

Education and training are important to the achievement of sustainable tourism ([Johnson, 1998](#)). Within the tourism industry, ecotourism is commonly seen as a platform for environmental education of tourists ([Tisdell and Wilson,](#)

2000). In a study conducted at a turtle watching site in Queensland, Australia, Tisdell and Wilson (2000) found out that a considerable amount of environmental education was obtained by visitors and that had a positive and statistically significant impact on their desire and intention to protect sea turtles.

Tourism businesses are adopting tools and strategies such as awards, eco-labels and certification schemes, communication and educational campaigns to direct tourists' behavior towards responsible tourism (Budeanu, 2007). In the case of hotels, available literature indicates that larger and better quality hotels are at the forefront of environmental management in general (Edwards, 2000; Mensah 2006; Mowforth and Munt 1998; Pigram and Wahab 1997). Though environmental education is seen as an aspect of the environmental performance of hotels (Leslie, 2007), there is limited empirical evidence on the direct results of environmental education programs by hotels since such programs are usually not stand-alone programs but appendages of other environmental management programs and initiatives in general. There are however, reports about hotels providing environmental education to guests and workers in some large and chain hotels such as Hyatt Regency, Colony Hotel and Scandic Hotels (Bohdanowicz et al., 2004; Enz and Siguaw, 1999). Erdogan and Baris (2007) as part of their larger study on environmental practices of hotels in Ankara discovered that 27% of hotels provided environmental education brochures to their customers. In a related study by Erdogan and Tosun (2009) on the environmental performance of tourist accommodation at the Goreme National Park in Turkey, one of the areas they observed significant differences among the different categories of hotels was in the provision of environmental education to guests. The 3-5 star hotels performed better than 1-2 star hotels and boarding homes which also performed better than apartment hotels and special licensed hotels.

In spite of educational programs and other sustainability practices undertaken by the tourism industry, there is the recognition that tourists are not committed to addressing environmental issues. Though tourists generally have positive attitudes towards sustainable tourism, only 1 in 20 engage in ERB such as purchase of responsible tourism packages, choice of environmentally friendly transportation or purchase of local produce (Chafe, 2005). Other studies have shown that people tend to engage in pro-environmental behavior at home more than when travelling (Dolnicar and Leisch, 2008; Miao and Wei, 2012). In a study by Baker and Davis in 2010, about 60% of respondents recycled paper products at home, compared to 30% who did that while at a hotel. Sixty percent of respondents conserved water at home, but less than 40%

did so at a hotel and 80% of respondents conserved energy at home, compared to 40% who saved energy while at a hotel (Virginiatech, 2010). In terms of ERBs by hotel guests, reuse of towels or linens has received the most research attention (Goldstein et al., 2007; Mair and Bergin-Seers, 2010; Shang et al., 2010). In a study by Mair and Bergin-Seers (2010) on motel guests in Australia, they found out that about 84% of respondents practiced towel reuse and that the provision of information either alone, or together with a request prompted and encouraged guests to reuse their towels. Tartaglia and de Grosbois (2009) in a study of tourists who visited Niagara Falls found out that respondents were strongly engaged in a number of activities, such as turning off TV when not in hotel room, turning off light when not in hotel room and taking short showers instead of bath. However, the majority of respondents either did not engage in or sometimes engaged in the use of recycling bins, getting sheets and towels changed only when necessary, turning off air conditioning when leaving hotel room, refilling water bottles and asking hotel about energy use.

Method

Data for this study was collected through a cross-sectional survey of international tourists at major attraction sites in the city of Accra in Ghana namely, Osu Oxford Street, Kokrobite Beach, La Beach, Du Bois Centre and Nkrumah Mausoleum. Accra was chosen for the study because it is the only city in Ghana with all the categories of hotels; ranging from guest houses to 5-star hotels. As the capital city of Ghana, it is also a major tourist hub with the only international airport in Ghana, attraction sites, pristine beaches, industries and all the trappings of urban life. However, for most of the quality hotels in the study area, it is a matter of company policy that their guests are not surveyed, since they see such exercises as an invasion of the privacy of their guests or harassment. In view of this, the study was conducted outside the hotel premises, international tourists were sampled because they by default spend at least one night at the destination in some form of accommodation. The convenience or accidental sampling method was employed to sample 382 international tourists from the attraction sites. International tourists who had stayed in a hotel for at least a day and were willing to take part in the survey were given self-administered questionnaires to fill out. Ross (2005) holds the view that convenience samples are referred to as ‘accidental samples’ because elements may be drawn into the sample simply because they just happen to be

situated, spatially or administratively, near to where the researcher is conducting the data collection. The sample size of tourists ($n = 382$) was derived by computing the minimum sample size required for accuracy in estimating proportions by considering the standard normal deviation set at 95% confidence level (1.96), percentage picking a choice or response ($50\% = 0.5$) and the confidence interval ($0.05 = \pm 5$).

Respondents were approached at the major attraction sites. After the purpose of the study was explained to them, their participation in the survey was elicited. In order to ensure that only tourists who had some hotel experience were studied, only those who had stayed in a hotel for at least a day were included in the study. Also, to avoid the problem of double response, respondents were first asked if they had not already taken part in the study. Also, to avoid response bias, care was taken not to sample all or majority of people in a group. Fieldwork was undertaken between June and August 2010 with the assistance of some trained field assistants. It took an average of ten minutes for a questionnaire to be completed. Though the questionnaires were largely self-administered, on a few occasions, field assistants had to assist some respondents who were Germans.

The instrument used was a semi-structured questionnaire which included both close and open-ended questions including the socio-demographic characteristics of tourists and their ERB such as conservation of water and energy. Likert scale ranging from 1-6 (1 = never, 6 = very frequently) was used to determine respondents' self-reported ERB. In all, a total of 343 questionnaires out of the 382 returned from the field were found to be suitable for analysis thus representing a response rate of 89.8%. The relatively high response rate is attributable to the fact that respondents were personally approached, explanations given to them and persuaded to take part in the survey.

A pre-test was undertaken in from May 24th to 29th in Cape Coast another popular tourist destination in Ghana to make the instruments more relevant and appropriate as well as to ensure content validity. The pre-test took an undeclared format which Czaja (1998) describes as a situation whereby the interview is conducted in the same manner as intended for the main study. The major issues identified with the questionnaires during the pre-test were inadequate response sets, questions not properly structured or worded. The instruments were subsequently revised.

Data collected from the field was edited, coded and processed using the Statistical Product for Service Solution (SPSS) PC version 16. Descriptive

statistics like frequencies, means, standard deviations and simple percentages were calculated for all the variables and used in describing and summarizing nominal data and other characteristics of the subject matter, after coding and editing responses. Chi-square was employed to test for the significance in the relationship between environmental education and type of hotel. Also, independent sample T-test with Levene's test for equality of variances was used to test for the differences in ERB between those who had received environmental education and those who had not as well as males and females.

Results

Socio-Demographic Characteristics of International Tourists

Table 1 describes the socio-demographic characteristics of the respondents. The number of females was slightly higher (56.6%) than males. Also, they were quite young, mostly (46.8%) within the age range of 21 to 29 years. More than half (52.8%) had obtained a bachelor's degree or Higher National Diploma (HND). It was also observed that they were mostly single (66.1%). In terms of religious affiliation, the majority (76%) were Christians but a significant number (11.8%) indicated that they were not religious. Respondents were mostly Americans (27.8%), followed by Britons (18.7%) and Germans (10.9%) respectively.

Environmental Education of Hotel Guests in Accra

For guests to fully partake in hotels' environmental programs, they must first be informed about the existence of such programs and educated on ERB expected from them. However, nearly three-quarters (73%) of respondents were unaware of environmental initiatives and programs in the hotels they stayed in while three-quarters (75%) had not been given any form of education on ERB by their hotels. This could be interpreted to mean that management of most hotels in Accra are not making conscious efforts at informing and educating their guests on environmental issues and ERB. This coincides with the findings of a J.D. Power and Associates Hotel Guest Satisfaction Study in 2007 where nearly three-fourths of hotel guests in North America were unaware of the existence of environmental programs at their hotels (Environmental Leader, 2007).

Table 1. Socio-demographic characteristics of international tourists

Characteristic	Frequency	Percent
Gender		
Male	149	43.4
Female	194	56.6
Total	343	100
Age		
Under 20	39	11.4
21-29	160	46.8
30-39	69	20.2
40-49	44	12.9
50 or more	30	8.8
Total	342	100
Educational Background		
Secondary	57	16.6
Bachelors or HND	181	52.8
Masters or Doctoral	105	30.6
Total	343	100
Marital Status		
Single	218	66.1
Married	83	25.2
Separated	29	8.8
Total	330	100
Religious Affiliation		
Christian	231	76.0
Muslim	13	4.3
Non-religious	36	11.8
Other	24	5.2
Total	304	100
Nationality		
American	92	27.8
British	62	18.7
German	36	10.9
Dutch	33	10.0
Canadian	15	4.5
Swedish	11	3.3
Other	82	24.8
Total	331	100
Continent of origin		
Europe	189	57.1
America	110	33.2
Africa	18	5.4
Asia/Oceania	14	4.2
Total	331	100

Guests contribute significantly to the environmental impacts of hotels through behaviors like leaving lights on when leaving their rooms. Research has shown that in-room messages requesting guests to help protect the environment by reusing their towels result in higher towel reuse compliance (Goldstein et al., 2007). The lack of environmental information and education

of guests by hotels in Accra could therefore serve as an obstacle to the promotion of ERB among hotel guests.

Medium of Environmental Education on Hotels

Respondents mainly relied on notices and websites of hotels for environmental information and knowledge on hotels as shown in Figure 1. Indeed, more than half of the respondents (57%) claimed they were educated on ERB through notices displayed at the hotel premises and in their hotel rooms. It appears the display of notices on environmentally acceptable practices at hotel premises appears to be the norm.

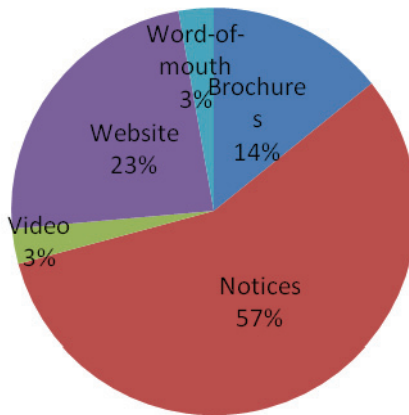


Figure 1. Medium of environmental education of guests

Only 3% of respondents were educated by word-of-mouth, suggesting that messages on ERB and hotels' environmental programs are hardly propagated verbally to guests. These findings also seem to suggest that hotels do not educate their guests through tour operators and other travel intermediaries since none of the tourists mentioned them as their sources of environmental education. This is against the backdrop that a sizeable number of respondents were institutionalized tourists whom Vogt (1976) described as complying with the conventional features of mass tourism such as familiarity, prior planning, safety, dependence and minimal choices as observed during the survey. Institutionalized tourists are organized tourists who depend on travel

intermediaries. However, travel intermediaries; especially tour operators could play a more significant role in informing and educating their clients before, during and after the trip. According to Pennington-Gray et al. (2005), many tour operators communicate with tourists to educate them on culturally and environmentally appropriate behaviors. Travel intermediaries could serve as conduits for channeling environmental information of hotels to tourists.

Environmental Education of Guests by Type of Hotel

A chi-square test at the $p < 0.05$ level indicated significant relationships between class of hotel and environmental education of guests. From Table 2, a greater number of guests of midscale to upscale hotels indicated that they had been made aware of environmentally friendly programs in the hotels and had been educated on ERB than those in hostels, budget hotels and guest houses.

Nearly half (48.2%) of guests of upscale hotels indicated they were aware of environmentally friendly programs and initiatives by their hotels compared to barely 6.7% of those who lodged in hostels and 15% of those who were in budget hotels. Also, only 6.7% and 13.6% of guests of hostels and guest houses respectively had been educated on ERB compared to 34.1% and 41.1% of those in midscale and upscale hotels respectively. The relationships between type of hotel and awareness of hotel’s environmental friendly programs and between hotel and education on ERB were both significant ($p = 0.000$).

Table 2. Percentage of respondents who received environmental education from different types of hotels

		Hostel N=15	Budget N=80	Guest House N=103	Midscale N=82	Upscale N=56	χ^2 (p-value)
Aware of environmental friendly programs and initiatives in hotel	%	6.7	15.0	20.4	34.1	48.2	26.462
	N	1	12	21	28	27	(0.000)
Educated on environmentally responsible behavior by hotel	%	6.7	20.3	13.6	34.1	41.1	22.427
	N	1	16	14	28	23	(0.000)

A plausible explanation for this is that larger and better quality hotels are at the forefront of environmental management (Edwards, 2000; Mensah 2006; Mowforth and Munt 1998; Pigram and Wahab 1997). Larger and better quality hotels could therefore be more committed to educating guests on ERB. Indeed in the literature there is documentary evidence on the environmental education programs of larger and chain hotels (Bohdanowicz et al., 2004; [Enz and Siguaw, 1999](#)).

Table 3. Environmentally responsible behavior by respondents

Behavior	N	Mean	Std. Dev.
Turning off water tap when not in use	341	5.54	0.82
Switching off light or appliances when leaving room	341	5.52	0.75
Purchase of local souvenirs	339	4.50	1.29
Ordering of local dishes instead of international	341	4.00	1.52
Avoidance of purchases eventually thrown away	336	4.73	1.22
Reuse of used towels or napkins	337	4.49	1.45
Dumping of waste into dustbins	341	5.42	0.94

Table 4. Environmental education and environmentally responsible behavior

Behavior	Educated			Not Educated			Sig.
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Turning off water tap when not in use	83	5.60	0.68	254	5.51	0.87	0.71
Switching off light or appliances when leaving room	83	5.57	0.77	254	5.50	0.74	0.43
Purchase of local souvenirs	82	4.71	1.17	253	4.41	1.31	0.03*
Ordering of local dishes instead of international	83	4.12	1.32	254	3.95	1.58	0.01*
Avoidance of purchases eventually thrown away	82	4.70	1.39	250	4.73	1.16	0.00*
Use of used towels or napkins again	82	4.26	1.62	251	4.55	1.38	0.01*
Dumping of waste into dustbins	83	5.60	0.85	254	5.35	0.97	0.11

*c.f.) Based on a scale of 1-6 (1 = never, 6 = very frequently), *p<0.05*

Environmentally Responsible Behavior

Table 3 presents the means and standard deviations of the level of ERB reported by respondents on their stay at the hotels. On the whole, respondents frequently engaged in ERB (Grand Mean = 4.90). Behaviors that led to energy and water conservation appeared to be those that were mostly engaged in by respondents. These were ‘turning off water tap when not in use’ (Mean = 5.54) and ‘switching off light and appliances when leaving room’ (Mean = 5.52). These findings are consistent with the findings of a previous study which indicated that tourists engaged strongly in energy and water conservation practices except reuse of towels (Targalia and de Grosbois, 2009). Generally, ERB that required respondents to sacrifice some comfort were not particularly

popular. These were 'ordering local dishes instead of international' (Mean = 4.00) and 'reuse of used towels and napkins' (Mean = 4.49). It appears tourists have a greater tendency to engage in ERB that will not affect their personal comfort. They may also not necessarily give up their food and cultural preferences and social safety nets because they are environmentally-conscious.

The study further revealed that tourists who had been educated on environmental issues by their hotels, reported greater ERB than those who had not been educated as shown by the results of a T-test in Table 4.

Tourists who had received environmental education reported higher ERB on five out of the seven indicators. The only two indicators on which those who had not been educated scored higher were 'avoidance of purchases eventually thrown away' (Mean = 4.73) and 'use of used towels or napkins again' (Mean = 4.55). However, the ERB of those educated was significantly higher on two of the indicators at the $P < 0.05$ level. These were 'purchase of local souvenirs' ($p = 0.03$) and 'ordering of local dishes' ($p = 0.01$). On the other hand, reuse of towels and napkins was significantly higher for those who had not been educated. Environmental education of guests therefore only influenced ERB to a limited extent. This situation may be explained by the fact that knowledge of environmental problems it is not sufficient to lead to an ERB (Szerenyi et al., 2009; Kollmuss and Agyeman, 2002). There are a number of mediating and intervening variables which this study did not capture. It has been suggested that other factors such as intention to act, prior knowledge and desire to act (Hines et al., 1987) as well as demographic, internal and external factors (Kollmuss and Agyemang, 2002) interact to ensure ERB.

Environmentally Responsible Behavior and Gender

The results which are presented in Table 5 indicate differences in some ERBs between males and females. With the exception of 'conservation of water by turning off water tap when not in use', the females performed better on all ERBs. However, the mean differences were significant at the $p < 0.05$ level for only two practices namely 'purchase of local souvenirs' ($p = 0.047$) and 'avoidance of purchases eventually thrown away' ($p = 0.001$). Women reported stronger environmentally-responsible purchasing behaviors than men. Earlier findings that women were more environmental-conscious and report higher pro-environmental behavior than men could therefore be partially supported since there were no significant differences in most of the ERBs. The significant differences in ERBs were limited to environmentally responsible purchasing

behavior.

Table 5. Environmentally responsible behavior based on gender

Behavior	Male			Female			Sig.
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	
Turning off water tap when not in use	148	5.60	0.66	193	5.48	0.92	0.20
Switching off light or appliances when leaving room	148	5.51	0.70	193	5.53	0.78	0.74
Purchase of local souvenirs	148	4.34	1.35	191	4.62	1.22	0.05*
Ordering of local dishes instead of international	148	3.93	1.53	193	4.07	1.51	0.38
Avoidance of purchases eventually thrown away	145	4.47	1.36	191	4.92	1.06	0.00*
Use of used towels or napkins again	148	4.39	1.44	189	4.57	1.45	0.27
Dumping of waste into dustbins	148	5.35	0.95	193	5.47	0.94	0.24

*c.f.) Based on a scale of 1-6 (1 = never, 6 = very frequently), *p<0.05*

Discussion

This study has brought to the fore, the fact that the bulk of hotel guests in Accra are neither informed about environmental programs being undertaken by hotels in Accra nor educated on ERB. Only about 27% of international tourists were aware of the environmental initiatives and programs of their hotels while 24.6% had been given some form of education on ERB by their hotels. The reality on the ground is that most of these hotels, especially the budget and guesthouses simply do not have environmental programs or initiatives in place. However, that should not be an excuse for not educating guests about simple energy and water conservation measures. The fact remains that irresponsible behavior of guests such as leaving lights and air conditioners on when leaving their room, leaving taps running when not in use or indiscriminate dumping of waste could thwart the environmental management efforts of hotels as well as national and global efforts at safeguarding the environment. For those hotels which are genuinely undertaking environmental management programs, their failure to involve their guests could negate their efforts at safeguarding the environment.

The study partially supports the results of earlier studies which suggested that women were more environmentally responsible than men. In this particular study, women reported greater ERBs than their male counterparts in all areas but one. Women had a greater tendency to switch off lights when leaving their rooms, purchase local souvenirs and food, properly dump waste and not buy

things they did not need. However, the disparities in ERB between males and females were not significant except on 'purchase of local souvenirs' and 'avoidance of purchases eventually thrown away'. The only ERB on which the men performed better, was turning off taps when not in use. This seems to suggest that women did not conserve water as much as their male counterparts. These findings mean that women could be used as change agents to inculcate environmental consciousness in men. Hotels could use women, especially in the case of couples and families to influence their male partners and children to act responsibly towards the environment.

The findings of this study ostensibly suggest that by instituting environmental education programs for their guests, hotels could inculcate ERB in them. But such a conclusion may not be far-fetched because the results of this study show a significant positive relationship between environmental education and some of the ERB namely, purchase of local souvenirs, ordering of local dishes and reuse of towels.

Hotels should educate their guest not only when they are in residence but even before they arrive at the hotel. Fortunately the internet offers opportunities for hotels to upload environmental information on their websites which from all indications represent a very important source of information to tourists since 23% of respondents claimed they were educated on ERB through this medium. Pre-arrival environmental education should also be undertaken through tour operators and travel agents who spend more time with the guests before they arrive at the hotels. Using these intermediaries as a medium for environmental education will ensure that by the time tourists arrive at the hotel, the message would have gone down well with them and they would have been adequately oriented to engage in ERB.

The major limitations with this study is on the collection of data on self-reported ERBs of international tourists. This means that the behaviour of domestic tourists was not captured. Also respondents had to recall in order to respond to the questions, in which case memory lapse could result in some misreporting. In spite of this, the findings are relevant and contribute to existing knowledge on the relationship between environmental education and ERB among tourists and hotel guests, an area that has received little research attention.

Extant theories and empirical evidence point to the fact that a number of factors interact to ensure ERB and not just environmental knowledge. This study however linked only environmental education to ERB. Therefore future studies should look at other factors that predict tourists' and hotel guests' ERB.

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