

## **Differences in Sustainability Practices among Jordanian Hotels**

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### **Abstract**

This study aims at exploring the extent to which Jordanian hotels apply sustainability practices, and the effect of hotel characteristics on sustainability levels. A multiple regression analysis was employed to investigate the effect of hotel characteristics (Class, ownership type, and education level for hotel managers) on sustainability practices. The results indicated that high class and chain hotels have more sustainability practices than low class and independent hotels. However, the educational level of hotel managers did not have a significant effect on sustainability level. The results from this study help hotels to develop conservation strategies benefitting their local economies, resources, and cultures. They may also enhance our understanding of the importance of community involvement in tourism. Future research could be extending it to such tourism businesses as restaurants.

### **Introduction**

Since releasing the Brundtland Report in 1987, the concept of sustainable development has received much attention from governments, planners, and academics (Rohanen et al, 2015). The Brundtland Commission Report provided the widely embraced definition of sustainable development as a one “that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987: 43).

Sustainable tourism development aims to provide needed principles to tourism service providers to act responsibly towards the socio-economic and ecological environments (Sobhana, &Sampada, 2012). Sustainable tourism development requires an appropriate balance between the economic, socio-cultural and environmental aspects. Therefore, to achieve sustainable tourism development, a high level of tourist satisfaction is required alongside with an optimal use of the environmental resources, respect for the socio-cultural authenticity of host communities, and a viable, long-term economic operation (Rigall-I-Torrent, 2008; Spenceley, 2010).

The hotel industry is classified among the high consumptive components of tourism in terms of energy, water, and non-durable products creating potential harmful emissions into the air, water and soil due to its functions and characteristics as a service provider (Bohdanowicz, 2005a; Erdogana&Baris, 2007; Kasim, 2009; Mensah, 2006). Consequently, many interested stakeholders, including academic researchers, have criticized the general policies of the hotel industry, the services they consume and provide, and the resulting environmental impacts. In addressing these concerns, many hotels around the world have adopted sustainable tourism practices to reduce the negative impacts of their activities having realized their responsibilities in protecting the environment (Mensah, 2006, Ayuso, 2006). In this context, the scholars and business leaders have realized that the appropriate way to maintain continuous economic benefit is by achieving social equity and ecological integrity, what is referred to as the “Triple Bottom Line” (TBL) (Smerecnik& Andersen, 2011).

Previous literature indicates that hotels have started to adopt environmental practices for many factors such as cost savings, government regulations (Chang and Wong, 2006), creating new markets (Chan and Hawkins, 2010), or environmental consciousness (Tzschentkea, 2008). Furthermore, Llorenc, Bagur-Femenias et al, (2013) found that being proactive on environmental issues can improve competitiveness and performance of these firms.

The current study applies a holistic definition of sustainable development including the pillars of economic, socio-cultural and environmental aspects, while most of the previous studies have focused on only one dimension of sustainability, primarily the environmental aspect as in the research conducted by Mensah (2006). This study further extends this research by focusing on the current sustainability practices in Jordanian hotels through an investigation of the three business bottom lines. However, to date, such issue has received scant attention in the research literature related to tourism industry in Jordan.

## **Literature review**

The desire to reduce the negative impacts of mass tourism has led to the introduction of the concept of sustainable tourism (Allan, 2012). Sethi (1999) postulates that the solution to the negative effects of mass tourism is to shift toward “alternative/ responsible/ sustainable tourism”. Since the 1990s, there has been a growing quantity of literature on sustainable tourism for two reasons. First, there has been much discussion on the virtues of sustainable development in 1980s; and second, there has been the recognition of the effects of mass tourism’s growth on the environment since the end of the World War II (Cornelissen, 2005). However, the response of the tourism industry to the concept of sustainable development has been positive in the last decade. In the accommodation sector, large businesses have adopted various initiatives to promote the principles of sustainability (Hobson, & Essex, 2001). Since the early 1990s, growing efforts have been taken to make the hotel industry “greener” by reducing energy and water consumption as well as the emissions released into the air, water, or soil (Bohdanowicz, 2005a; Tzschentke et al., 2004). Hospitality firms have also adopted initiatives to show their commitment to sustainable development (Ayuso, 2006, Kirk, 1998).

Recently, a growing body of literature has investigated sustainability practices in the hotel industry, attempting to evaluate and identify the level of performance for these practices

throughout the world (Bohdanowicz, 2005a; Erdogana&Baris, 2007, Kasimu et al, 2012; Mensah, 2006; Mensah&Blankson, 2013; Mihalic et al, 2012; Nichollas& Kang, 2012; Rahman, et al., 2012; Smerecnik& Andersen, 2011). For example, Kasimu, et al. (2012) studied the sustainable tourism practices found in Malaysia, investigating the current level of the contribution of hotels to environmental practices and the role of hotel managers in adopting practices which protect the environment. Whereas Mensah and Blankson (2013) identified the factors measuring the environmental performance of hotels in Ghana and examined the socio-demographic characteristics of managers and the organizational characteristics that determined the environmental performance of Ghanaian hotels.

By investigating the environmentally friendly practices of American hotels, Rahman, et al. (2012) found that chain hotels were stronger adopters of green practices than independent hotels due to the leveraging economies of scale through uniform corporate practices. In Turkey, Erdogana and Baris (2007) found that Ankara's hotels generally have weak environmental protection and conservation policies, and that most hotel managers lack the necessary environmental knowledge and interest to meet the basic objectives of social and environmental responsibility. Accordingly, they recommended developing an integrated system of policy and practice involving not only the hotel management and staff but also all parties concerned with environmental protection and sustainability, and to re-evaluate and reconsider national, local, and hotel policies and training activities.

The literature indicates that high class hotels are more sustainable than low class ones (Bohdanowicz, 2005a; Erdogan&Baris, 2007; Hobson & Essex, 2001; Mensah, 2006; Mensah&Blankson, 2013; Nicholls & Kang, 2012) because they have financial and technological resources needed for undertaking successful environmental management (Mensah&Blankson, 2013). The sustainability practices of hotels have been linked to the socio-demographic characteristics of the managers. For example, Rivera and de Leon's (2005) study of the Costa Rican hotel industry found that managers who were more educated were more likely to participate in voluntary environmental programs because of their awareness of the negative impact of the industry on the environment and the importance of sustainability in increasing the life cycle of the establishment. On the other hand, previous research has also found that chain hotels have more sustainability practices than independent hotels due to their various resources (Bohdanowicz, 2006; Nicholls & Kang, 2012; Smerecnik& Andersen, 2011; Rahman et al, 2012; Peršić-Živadinov, 2009) and small and independent hotel staffs were less likely to pay less attention to the environmental issues (Cummings, 1997; Enz&Siguaw, 1999; Kirk, 1998).

Since there are very few studies investigated the issue of sustainability in the context of the hotel industry in Jordan, therefore, this research attempts to address this issue. Consequently, the following hypotheses will be tested:

H1: Hotel class level does influence sustainability positively.

H2: The educational level of hotel managers does influence sustainability positively.

H3: Ownership type does influence sustainability positively.

## Methodology

A quantitative approach was chosen to obtain further in-depth information on the issue of sustainability practice among hotels managers in Jordan. A self-administered questionnaire was developed to collect the data. This questionnaire was distributed to the hotel managers to evaluate the level of the implementation of sustainable tourism development in Jordan's hotels. First, personal calls were made to the managers of the hotels where the questionnaires were to be distributed to confirm their willingness to participate. To maximize the response rate, the questionnaires were conducted face-to-face by the researchers during the off-season providing adequate time to the managers to complete this part of the survey. In total, 163 completed surveys were returned for a response rate of 77%. The survey took place from 1 April to 20 June 2014. This study surveyed all classified hotels in the four primary destinations in Jordan (Amman, Petra, Aqaba, and the Dead Sea), a total of 228 hotels representing about 90% of classified hotels in the country. The lists of hotels obtained from the Jordan Hotel Association (JHA) and the Aqaba Special Economic Zone Authority (ASEZA) served as a sampling frame.

The questionnaire was divided into three sections:

- Current sustainability practices in hotels using a five - point Likert scale (0 = never, 1= very rarely, 2= rarely, 3 = occasionally, 4 = frequently and 5 = very frequently (Mensah&Blankson, 2013).
- Hotel characteristics such as size, location, classification, ownership type, number of guestrooms, number of employees; and occupancy rate, while the demographic information of the hotel managers was the subject of section three, including gender, age, education, salary, experience, and nationality.

The questionnaire items were based on previous studies?????, with appropriate modifications to suit the characteristics of the hotel industry in Jordan. For this study, sustainability practice level was an aggregate score of the three pillars of sustainability: environmental (energy management, water conservation, waste management, and environmental education), socio-cultural, and economic indicators. To enhance the validity and reliability of the questionnaire, a pilot study was conducted before undertaking the final survey to check whether the answers obtained would provide the information sought and to address wordy problems. According to Hair et al. (2010), all dimensions should have a Cronbach's alpha value higher than 0.7 to indicate a high degree of internal consistency.

Screening the data was the first and most important step before testing the hypotheses. In this process, the outliers, missing values, and normality issues that could influence the results were addressed. The Statistical Package for the Social Sciences program (SPSS) version 22 was used here for frequency analysis and reliability analysis. All the hypotheses of this study were tested at the significance level of 0.05. Frequency analysis was employed to describe the characteristics of the hotels and the hotel managers, and to describe the level of the sustainability practices at Jordanian hotels. A multiple regression analysis was employed to investigate the effect of hotel

characteristics (Class, ownership type, and the education level of hotel managers) on sustainability practices.

## Results and discussion

### Descriptive statistics

#### *Characteristics of hotel managers*

The demographic information from the hotel managers responding to the survey can be seen in Table 1 below:

Table 1. Demographic profile of respondent managers.

Category	Frequency	%
<b>Gender (N=163)</b>		
Male	151	92.6
Female	12	7.4
<b>Age (N= 162)</b>		
18-30	47	28.8
31- 40	66	40.5
41 – 50	36	22.1
51- 60	10	6.1
Above 60	3	1.8
<b>Education (N=162)</b>		
High school	42	25.8
Diploma in general field	24	14.7
Diploma in tourism	12	7.4
Bachelor in general field	61	37.4
Bachelor in tourism	16	9.8
Grade degree	7	4.3
<b>Monthly salary (N=161)</b>		
Less than \$1000	117	71.8

\$1000 - \$1999	30	18.4
\$2000 - \$2999	14	8.6
<b>Current position (N=163)</b>		
General manager	24	14.7
Owner manager	12	7.4
Departmental manager	58	35.6
Other	69	42.3
<b>Experience (N=163)</b>		
Less than 6 years	56	34.3
6 -14years	59	36.2
15 -25 years	39	24
Above 25 years	9	5.5

As shown in table 1, the majority of respondents were male (92.6%), reflecting the gender bias in top managerial positions in the Jordanian hospitality industry, a result supporting what Mensah&Blankson (2013) found in Ghana. The primary reason for this gender bias is Jordanian culture which prefers men and women to work in separate environments. In addition, more than two thirds of the hotel managers (69.3%) were between the ages of 18 and 40 years, with 70.6% being married, and 71.8% of the respondents earned monthly incomes less than \$1,000, with approximately half (51.5%) having a Bachelor's Degree or above. Their current positions included 35.6% departmental managers, 14.7% general managers, and 7.4% owner managers. The average working experience in the hotel industry was 10.7 years, with 70.6% of the participating hotel managers having 14 years and below. This demographic profile information is consistent with the increase in the number of hotels in the country since 2000.

#### *Characteristics of hotels surveyed*

The characteristics of the hotels surveyed, including class, ownership type, the nationality of the owner, size, room rate, hotel age, eco-certification, number of employees and location, are summarized in Table 2. below:

Table 2. Demographic profile of respondent hotels.

Category	Frequency	%
<b>Classification (N=163)</b>		
5 stars	21	12.9

4 stars	30	18.4
3 stars	51	31.3
2 stars	40	24.5
1 star	21	12.9
<b>Ownership type (N=163)</b>		
Independent	133	81.6
Chain	30	18.4
<b>Owner nationality (N=163)</b>		
Jordanian	144	88.3
Non- Jordanian	15	9.2
Mixed nationality	4	2.5
<b>Guest rooms number (N=162)</b>		
Less than 50 rooms	75	46.3
50 – 100 rooms	41	25.3
101 -200 rooms	26	16
201 -300 rooms	13	8
Above 300 rooms	7	4.4
<b>Average room rate (N=162)</b>		
Less than \$50	53	32.7
\$50 - \$100	64	39.5
\$101-\$150	28	17.3
\$151-\$200	15	9.3
Above \$200	2	1.2
<b>Hotel age (N=159)</b>		
0-10 years	49	30.8
11 – 30 years	86	54.1
Above 30 years	24	15.1

**Eco-certification (N=160)**

Yes	30	19
No	130	81

**Number of employees (N=162)**

1-15	69	43
16-50	40	25
51-100	23	14
above 100	30	18

**Hotel location (N=163)**

Amman	109	66.9
Aqaba	30	18.4
Dead Sea	6	3.7
Petra	18	11

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As this table shows, 31.3% were 4 and 5 star hotels (large or luxury hotels), 31.3% three star hotels, and 37.4% 1 and 2 star hotels (small hotels). As also seen in Table 4.2, the majority of hotels studied (81.6%) were independent, while 17.8% were affiliated with chains. In addition, most of the hotels (88.3%) were entirely Jordanian-owned. Regarding age, 70% of the respondent hotels were 10 years or older. The survey also found that 46.3% of the hotels had fewer than 50 guest rooms while 25.3 % had between 50 to 100, meaning that 71.6 % were small to medium size hotels. The average room rate of 72.2% of hotels was less than \$100 per night. More importantly, only 19% of participating hotels had an eco-certification such as Green Key, Green Globe, Blue Flag, Iso22000, Iso14000 or Haccp. In terms of the number of employees, 68% of respondent hotels employed fewer than 50 workers on average between low and high seasons, with 14% employing between 50-100 workers and 18% more than 100 workers.

Previous studies have indicated that most of the large hotels (4 and 5 stars) refused to participate in their surveys (Kasim, 2009, Kasimu et al., 2012). The current study employed several techniques to address this issue, including providing written and verbal assurance of confidentiality; contacting existing current managers (general managers or departmental managers); using personal skills to convince managers to participate in the survey; conducting the survey during low season; and personally calling the hotels in advance to ask them to participate. Finally, the managers were asked to provide their email address so that a copy of the



results could be sent to them in appreciation for their help. As a result of these techniques, 84% of both 4 and 5 stars hotels participated in this survey, 68% of the 5 stars and 100% of 4 stars.

### *Hotel participation in sustainability practices*

Hotel managers were asked to answer 36 questions on the three dimensions of sustainability: environmental (21 items, Alpha= .933), socio-cultural (7 items, alpha = .739), and economic (8 items, alpha = .778). The internal consistency of these 36 items was .948, indicating a level high reliability.

The results for first dimension, environmental sustainability, can be seen in Table 3:

Table 3. Items in measuring the environmental dimension (Alpha .929).

Sustainable practices	%	M=	S.D=
		<b>2.24</b>	<b>1.89</b>
<b>Energy management</b>			
Installing of occupancy sensors/key card	46	2.35	2.41
Using energy efficient equipment and products	50	3.16	1.75
Implementing renewable energy programs	16	1.40	1.73
Using high energy efficient lighting.	57	3.51	1.51
Renovation of facilities.	32	2.70	1.64
<b>Water management</b>			
Using low-water-volume toilets	38	3.01	1.61
Using dual piping system	26	1.64	2.08
Installing water-efficient devices	42	2.60	2.02
Implementing linen and towel reuse program	63	3.29	1.99
Implementing water saving campaigns in the kitchen	28	1.72	2.03
Capturing rainwater runoff and reusing it	7	.283	.812
Using treated waste water for garden irrigation	9	.339	.912
<b>Waste management</b>			
Reusing papers, crates, bottles, cans and plastic	21	1.55	1.88
Using refillable soap & shampoo dispensers	23	1.50	2.02

Using environmentally friendly detergents.	22	2.23	1.70
Sorting waste into paper, glass, plastic etc.	18	.96	1.81

#### **Environmental Education**

Informing guests about hotel's environmental policies	35	2.23	2.13
Educating guests on eco-friendly practices	35	2.22	2.12
Educating staff on eco-friendly practices	54	3.31	1.70
Enforcing of no smoking in public areas	50	2.87	2.02

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Five - point Likert Type Scale (0 = Never, and 5 =Very frequently).

Energy is one the most important resources to be managed in the hotel industry since controlling its cost helps hotels remain profitable and competitive. Thus, the majority of Jordanian hotels pay a substantial attention to energy cost, with the findings of this research confirming those of previous studies (Bohdanowicz, 2005b; Erdogan&Baris, 2007; Hobson & Essex, 2001; Kasimu, et al., 2012; Mensah, 2006; Nicholls & Kang, 2012). According to the results, the most wide-spread eco-friendly practice for energy management was using high energy-efficient lighting (57%). This percentage was close to the results (64.1%) found by Erdogan and Baris (2007) in Turkey, while it was less than the 94.2% found by Mensah (2006) in Accra and Ghana, and the 77% found by Nicholls and Kang (2012) in Michigan, USA. The second most frequently used conservation of energy consumption was the use of energy efficient equipment and products (50%), followed by the installation of occupancy sensors/keys 46%, findings close to those from Erdogan and Baris's study (2007) (56%) but higher than the 10% found in the Michigan study ( Nicholls & Kang, 2012). As seen in Table 4, adopting renewable energy resources received fairly low scores with only 25 hotels (16%) using alternative resources like a solar power system. During interviews, hotel managers of small and medium size hotels expressed concerns over the initial financial costs of renewable energy devices as their desire was to obtain quick revenue, not long-term economic returns.

Water is considered as one of the primary challenges in Jordan. To control its consumption, the Jordanian government created the policy "the greater the consumption, the greater the pricing for each cubic meter." REFERENCE To address this situation, water management practices have been adopted by many hotels, a response supported by the results from this study, which found that 63% of the hotels had linen and towel reuse programs, similar to Erdogan and Baris's (2007) finding of 63.1%. This program plays a vital role in saving both co;8sts and an important resource by promoting less water and energy use, and employee salaries for washing. Installing water-efficient devices and equipment like shower heads (42%), and using low-water-volume toilets (38 %) were the second priority. However, few hotels, only 28%, implemented water saving initiatives in the kitchen, and implementing a dual piping system to reduce water consumption scored a similar 26%, supporting Mensah's (2006) findings for Ghana hotels (28.8%). The least frequently adopted practices were using treated waste water for garden

irrigation at 9%, a percentage supporting the findings of Kasimu et al. (2012) and capturing rainwater runoff and reusing it at 7%. The respondent managers indicated that the high cost of adopting these activities is the primary barrier.

Waste management practices were some of the least frequently adopted practices in Jordanian hotels, the results finding the following practices: using refillable soap and shampoo dispensers (23%); using environmentally friendly detergents (22%); reusing papers, crates, bottles, cans and plastic materials (21%); and sorting wastes into paper, plastic and glass (18%). The percentage for sorting of wastes for recycling goals was consistent with the findings of Erdogan and Baris (2007) in Turkey and Mensah (2006) in Ghana. These results suggest that waste management in the hotel industry in developing countries like Jordan is modest, perhaps because as the hotel managers indicated, recycling is an expensive activity and only large hotels can afford to adopt this practice. In addition, according to several hotel managers, there are no recycling firms in the Dead Sea, Petra, and Aqaba areas, meaning disposing of garbage in the local municipal dump is cheaper than sending it to Amman for recycling. Only a quarter of the respondent hotels used refillable soap and shampoo dispensers, with several managers justifying this decision by contending it is not sanitary and may affect the satisfaction of the guests with the hotel and thus its reputation. This result is consistent with the study conducted by Kasimu et al. (2012) in Malaysia.

Educating the staff on eco-friendly practices and implementing a no-smoking policy at 54% and 50%, respectively, were the most widespread environmental education practices implemented. However, educating guests on eco-friendly practices and informing guests of the hotel's environmental policies were each adopted by 35% of the hotels, with managers justifying this low adoption rate by explaining that this is a sensitive issue since it may annoy the guests, thereby influencing their willingness to visit the hotel again (Table 5).

The results for the socio-cultural dimension of sustainability are listed in Table 4.  
 Table 4. Items in measuring the socio-cultural dimension (Alpha .741).

Items	%	M=2.68	S.D=1.57
Using local materials	44	3.18	1.30
Employing Jordanian people	78	4.24	.93
Promoting local traditional culture	22	1.93	1.70
Providing part of the hotel profit to improve residents lives'	21	1.63	1.72
Serving traditional food locally produced	86	4.14	1.49
Selling local production of handicrafts.	25	1.43	2.01
Offering practical training for tourism & hospitality students	32	2.24	1.90

Although Jordanian hotels do not exhibit social responsibility toward the local people and their culture directly, they do so indirectly by serving traditional food locally produced (86%), employing Jordanians (78%), and using local materials (44%). In addition, one third of the participating hotels offered practical training for tourism and hospitality students at various levels.

The results for the third and final pillar of sustainability, the economic dimension, are found in Table 5. below:

Table 5. Items in measuring the economic dimension (Alpha .792).

Items	M=2.81	S.D=.98
Average occupancy rate in the last two years	3.23	.88
Having a diverse base of different market segments	4.16	1.07
Profitability of capital	1.83	.98
Solvency ratio and cash flow	1.83	.95
The % of employee's salaries that are higher than other hotels	3.23	1.12
Customers satisfaction level is high	4.17	.75
Average room rate	2.05	.97
Guest rooms number	1.99	1.16

The results found here indicated that having a high level of customer satisfaction with a mean of 4.17 was the most important economic indicator for Jordanian hotels, followed by having a diverse base composed of different market segments (Mean= 4.16). Customer satisfaction is a critical issue in the hotel industry because it is directly related to the decision to return (Stevens, 1992). Also related to the economic indicator was the average occupancy rate over the last two years and the percentage of employee salaries higher than that of other hotels, both of which were ranked third with means of 3.23.

Table 8. The effect of hotel's characteristics on sustainability

	DV		
	Sustainability $R^2=.862$		
IV	B(SE)	Beta	z-score
<b>Class</b>	.72(.079)	.793	9.091**
<b>Education</b>	.014(.055)	.011	.246

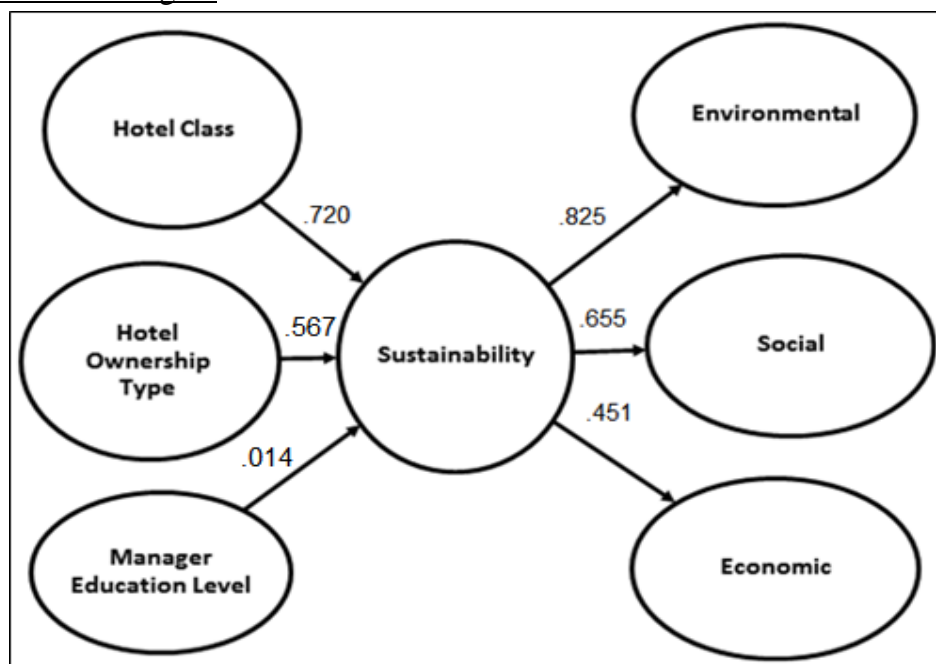
<b>Ownership</b>	.567(.157)	.198	3.612**
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\* $P < .05$ ; \*\*  $P < .01$

A series of multiple regression analysis was conducted to examine the relationship between hotel class, educational level of managers, and ownership type of hotel with the sustainability practices in the targeted hotels. The dimension of hotel class, educational level and ownership served as the dependent variables, whilst sustainability practice was the dependent variables.

The results also demonstrated that hotel class has a positive significant effect on sustainability ( $B = .72$ ,  $z = 9.091$ ). As seen in Table 8, the educational level of hotel managers has no significant effect on sustainability ( $B = .014$ ,  $z = .246$ ). In addition, sustainability was positively affected by the ownership type ( $B = .567$ ,  $z = 3.612$ ) indicating that chain hotels have more sustainability practices than independent hotels. The results also indicate that hotel characteristics explain the most variance in sustainability  $R^2$  (.862).

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**Figure 1: The conceptual framework**

## Hypotheses evaluation

The results support Hypothesis 1, meaning that hotel class had a positive and significant effect on sustainability indicating that high class hotels were more sustainable than the low class ones, probably because the former have the financial and technological resources needed for successful environmental management. In this respect, this study supports the findings of previous research (Ali, et al., 2008; Bohdanowicz, 2005a; Erdogan&Baris, 2007; Hobson &

Essex, 2001; Mensah, 2006; Mensah&Blankson, 2013; Nicholls & Kang, 2012). For example, Ali, et al.,( 2008) found that five and four star hotels in Jordan tended to use energy efficient appliances, thereby reducing energy consumption, while low class level hotels do not have the interest, time, financial and technological resources to adopt such sustainability practices (Hobson & Essex, 2001; Mensah&Blankson, 2013).

The findings also indicate that the educational level of hotel managers has no effect on sustainability, this result does not support Hypothesis 2: The educational level of hotel managers does influence sustainability. These results are supported by the study conducted by Mensah and Blankson (2013) in Ghana. However, they require further investigation through additional case studies. It could be concluded that hotel managers are constrained and are kept away from the process of decision making regarding sustainability and financial leakage. In chain hotels, the hotel managers just implement the policies of the chain, and in the independent hotels, the owners of independent hotels seek only quick revenue and keep putting pressure on the manager to achieve this goal which makes them neutralized and not effective in decision making or drawing sustainable policies in Jordanian hotels.

Sustainability was also positively affected by ownership type, indicating that chain hotels are more likely than independent ones to engage in sustainability practices, supporting Hypothesis 3: Ownership type does influence sustainability positively. This result attributed to the availability of the financial and technical resources needed for sustainability corroborating the findings of previous research (Bohdanowicz, 2006; Nicholls & Kang, 2012; Rahman, et al., 2012). Since the correlation between hotel class and ownership type was high (0.6), their effect on sustainability was similar.

The results also indicate that the hotel ownership type predicts environmental education and waste management, this finding demonstrating that independent hotels were more concerned about environmental education than chain hotels. Supporting data of this result can be found in the researcher's field notes which indicate that most independent hotels are managed by owners, who are eager to implement recommendations for decreasing energy and water consumption, thereby reducing operational costs and increasing revenues. However, the results suggested that chain hotels are more concerned about waste recycling than independent ones, a finding supported by the interviews of the hotel managers who indicated that chain hotels, unlike the independent ones, have the financial and technological ability to adopt recycling policies.

## **Conclusion**

To date, the issue of sustainability practices among hotels' managers in Jordan has received scant attention in the research literature. Therefore, the purpose of this study was twofold: first, exploring the extent to which Jordanian hotels apply sustainability practices, and second investigating the effect of hotel characteristics (Class, ownership type, and educational level of hotel managers) on sustainability levels.

The environmental sustainable practices most frequently recommended for adoption included using high energy efficient lighting and energy efficient equipment and products, implementing

linen and towel reuse programs, and installing occupancy sensors or key card. As these suggestions indicate, Jordanian hotels are more focused on the economic dimension of sustainability than the environmental, emphasizing decreasing their consumption of energy and water, which, in turn, can increase revenue. These results support the studies conducted by Ali, et al. (2008) in Jordan and Mensah (2006) in Ghana.

The results also found that Jordanian hotels have poor waste management policies. The hotel managers mentioned the reasons for this included a lack of awareness of the importance of recycling. Managers of small hotels justified their lack of participation of small hotels in adopting recycling practices like sorting waste into paper, glass, and plastic because of the shortage of recycling firms and the high cost. Therefore, these findings suggest that in general the government and local municipalities, especially in the Dead Sea area, Petra, and Aqaba, have to build the needed infrastructure for recycling and encourage establishing private recycling firms.

### **Study implications and future research**

The recommendations resulting from this study can be incorporated into conservation management plans, and the results may help to shed light on the importance of local community involvement in tourism, particularly in the hotel industry and in management plans. It would be beneficial for other businesses like restaurants, especially the large ones, to adopt sustainability practices suggested by the hotel managers, particularly those involving the management of energy and water resources. These practices will contribute to reducing the operational cost and enhancing the image of the restaurant in the eyes of guests, employees, government, and local community.

Furthermore, since sustainability practices have been adopted by hotels relatively recently and the possibility of sustainability benefits are achieved over time,

it is recommended that a longitudinal study of the hotel industry be conducted to explore the evolution of sustainability practices in this sector. Moreover, further work needs to be done to check the nature and scope of sustainability practices in different accommodation types in different cities in Jordan.

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