

The Effect of Environmental Preservation, Advanced Technology, Hotel Image, and Service Quality on Guest Loyalty

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Abstract

This paper aims at investigating the effects of environmental preservation, advanced technology, hotel image, and service quality on guest loyalty. A total of 193 questionnaire containing 48 items was used to collect information from guests in five-star hotels in Aqab city located in Jordan. Multiple regression analysis was conducted to test the research hypotheses. Results of the current study revealed that there is a significant impact of environmental preservation, hotel image, and service quality on guest loyalty, whereas advanced technology has no significant impact on it. The implications of these results to both theory and practice is discussed at the end of this paper.

Keywords: environmental preservation, advanced technology, hotel image, service quality, guest loyalty, Aqaba, Jordan

1. Introduction

In our present age, many factors contributed in the development of hospitality and tourism industry (Hamoud et al., 2016). Of the most important factors are the economic, cultural and social development and the increasing desirability of individuals to travel and navigate due to the availability of free time and the tendency to participate in voluntary activities and getting acquainted with other civilizations, or this could be for medical treatment or education (Alshawagfeh, et al., 2015). As a result of the great interest received by this sector from the world's governments which directly influenced the increase of the hotel activity, an intensive competition among tourist destinations to attract tourist urging those destinations to investigate the factors that affect the guests' behavior, try to realize their satisfaction and focus on the services the guests wish to have in order to enable the hotel facility to compete and share in the highest possible rate in the market (Al-Hussein, et al., 2015). Therefore, the quality of service received great attention from both the provider and receiver of the service. With the development of modern technology and international communication methods, many auditory, visual and written promotional campaigns were launched warning from the increasing aggression against natural resources and the consequences of this on planet earth and future generations. Accordingly, the customers' attention to the hotels which preserve the environment increased.

Moreover, the development in technology still has many reflections on the hospitality sector and competition has become strong among hotels to provide modern technological services to their clients concerning the control of service, security, safety and entertainment (Bazazo & Alananzeh, 2016). All this creates positive reputation for the hotel and forms a mental image that makes customers speak positively about that hotel which is called (WOM) word of mouth. Because of the fast and continuous developments in the hospitality sector, it suffers difficulties in getting new customers for the multiple choices they have. This made the hotel establishment, or the tourist destination more generally, shift from the objective of attaining new customers as a secondary role, to keeping the present customers as long as possible as a main role through keeping up with the new and modern techniques, getting acquainted with

the strategies of competitors and providing special programs that enhance loyalty and belonging to the hotel establishment and help to wide-spread its positive image internationally.

Considering the entry of big investments to Jordan during the past few years, especially in Aqaba governorate in the south of Jordan which is the only sea-port and part of the Jordanian golden triangle (Aqaba, Petra, Wadi Rum) , it received attention in 2001 to be special economic developmental area exempted from customs fees. From that time on, Aqaba witnessed several huge tourist projects and the number of hotels and tourist facilities increased to become the second largest tourist city concerning the number of hotels and tourist establishments after the capital Amman, and as a result, there has been great competition between those hotels to gain the largest possible number of customers (Alananzeh, 2014). Therefore, this study has come to shed light on the loyalty of the guest and assessing it through the perspective of guests in different hotels in Aqaba city and also because of the scarcity of the researches which focused on studying the factors which affect the guest's loyalty to the hotel establishment in Jordan in general and its rarity in Aqaba city in particular. For that reason, this study sought to identify the loyalty of guests about the services of five – star hotels in the city of Aqaba.

This study aimed at recognizing the extent of care hotels give to the environmental aspect (Green Hotels) and also to Know the hotel's care for using developed technology to present it to customers, the extent to which a hotel gives attention to the quality of the products and services to customers and the degree of their response to the customers' demands. The main objective of this study is to assess the factors of guests' loyalty in several hotels in Aqaba concerning the care of the hotel for the environment and modern technology and quality and their impact on the hotel's reputation.

The importance of this study is in presenting practical recommendations to the hotel sector in Aqaba city based on the tourists' recognition to the most important factors that influence their satisfaction and create their loyalty to the hotel to improve the reputation of the hotel sector in Aqaba city in particular and the rest of the kingdom's regions in general. Since the realization of the guests' loyalty is the main key to success and noble competition and recognizing the reasons or factors that cause the loyalty of guests is the purpose of all service sectors including hotels and the reflection of this on the hotel's reputation and the role performed by the hotel sector in the national economy. Tourism industry has an effective role in providing work opportunities in Jordan as the statistics of Jordan Tourism Board indicated that the tourism sector in Jordan provided more than 50 thousand job opportunities in 2012 and that the workers in this sector exceeded 140 thousand, which means that about one million persons got benefit from the revenues of tourism sector (Jordan Tourism Board, 2012). The number of workers in the hotel sector in 2014, according to the statistics of the Ministry of Tourism and Antiquities, reached at 18644 and the number rose to 19058 in 2015 who are the direct workers in hotel sector (Ministry of Tourism and Antiquities, 2016).

2. Literature Studies

Hospitality institutions nowadays seek to present the best possible services to tourists in a way that exceeds the expectations and requirements of the tourists. Presenting the best is the key by which those hotel establishments achieve progress on the local, regional and international levels. The tourist has become the center of attention and concentration, the main factor which forms the marketing strategy and the hub of the entertaining process of the hotel institution (Oliver, 1999; Sasidharan, et al., 2002; Bazazo, et al., 2016a).

2.1 Quality and Loyalty

Hawkins, et al. (1995) and Griffin (1995) defined loyalty as the consumer's intention to buy the product or the service again or the tourist's intention to return to the hotel. This is usually connected to quality or emotional reasons. Many studies indicated that loyalty is an important indicator to the success of the hotel. When the customer returns to the hotel, this refers to the hotel, this refers to the success of the hotel in the market (Turnbull & Wilson, 1989; Bauer, et al., 2002; Bigne & Andreu, 2002; Yoon & Uysal, 2005; Kim, et al., 2015). In a study conducted by (Loureiro & Gonzales, 2008) about the effect of some factors in creating the loyalty of tourists in a visit to the rural areas, they pointed out the quality is the final judgment of the tourists on the service they received. This, accordingly, forms the impression or feeling of loyalty and the desire whether to repeat the visit or not. The study concluded that service quality has an effect and positive significance to the tourist in raising their loyalty to the tourist destination and a positive relationship between quality and the level of the tourist's satisfaction.

However, a number of researchers like (Oliver, 1980; Grönroos, 1990; Chiou, 2004; Alexandros & Shabbar, 2005; McCleary, et al., 2006; Tsoukatos & Rand, 2006; Bazazo, et al., 2016b) indicated that not only quality that creates the tourists loyalty but the confidence, quick response and safety are also important and sensitive factors in founding and creating the tourist's loyalty to the tourist destination in addition to the institution's reputation, the mental image

of the hotel or the vision fancied by the tourist about a hotel or tourist destination. Loyalty differs due to culture that is loyalty is connected to the customer's culture and this was confirmed by the study of (Tsaur, et al., 2005) in comparing the loyalty of three different cultures concerning the quality of service and its connection to loyalty, as their study revealed the English tourists are more appreciative to quality than Asians and Europeans. Loyalty is the desire generated in the customer to return to the hotel or to transact several times with the service provider. This happens when the customer recognizes the economic benefit of the service they receive and which fulfilled their desires. In other meaning, loyalty is a psychological factor in the customer related to their receipt of high quality that positively affects their psychic (Bansal & Taylor, 1999; Ranaweera & Prabhu, 2003). Moreover, Butscher (2002) asserted that creating long-term loyalty does not necessarily depend on the materialistic aspect only but also on emotion, trust and partnership. Correspondingly, Geronikolas (2012) concentrated on the factors which alienate the tourist or customer from the hotel and mentioned untrained employees, lack of cleanliness, prices and quality of food and drink. Doubtless that applying the principles of comprehensive quality management in the hotel sector enhances the quality of the hotel services that should meet the requirements and expectations of tourists whether on the local or regional level (Bazazo & Alananzeh, 2016).

2.2 The Image and Reputation

Assael (1987) defined "image" as the final or total recognition of the tourist destination or the hotel which formed over years through the accumulation of information directly or indirectly on the previous experiences. He also pointed out that image is the set of beliefs which formed a complete image for a destination or hotel. Chiu and Ananzeh (2012a, 2012b) argued that the cognitive image of the destination has a great impact on the formation of the affective image and the overall image. Martin & Bosque (2008) defined it as a mental structure formed through selected impressions from a flow of impressions. The study presented by Back (2005) about the effect of "image" on the consumer's behavior after the purchase and its impact on the level of their satisfaction and loyalty to the hotel showed that the formulated image affected their satisfaction and loyalty. Tepeci (1999) also indicated that building a positive image of the hotel or service institution is a step on the right track to constitute a permanent loyalty under the service competition on the regional and international level, while (Han & Hyun, 2012) pointed out that there is another loyalty which is the loyalty of the rich class to the fancy restaurants or Five -star hotels because those look for distinction.

2.3 Advanced Technology

Advanced technology affected tourism industry and caused an international revolution. It enabled the tourist to determine and classify the tourist products and services, so it affected the decision of purchase and played an important role in the service competition especially the electronic tourism and the internet supported the cooperation and interaction between the provider and receiver of the service and reorganized, developed and marketed the tourist service and tourist destination with complete concentration on what the tourist needs from advanced technological means (Buhalis & O'Connor, 2005). While Ribbink, et al. (2004) referred to what is called (e-trust) where they explained what trust is closely connected to trust which in turn leads to satisfaction which constitutes loyalty, as the results of their study Showed close relationship between e-trust and loyalty. In other meaning, as a result to e-trust, electronic loyalty appeared which is part of the direct loyalty resulted from the credibility of the electronic transaction and the electronic services the tourist receives before the purchase process or during his consumption to the service or product and the advanced technological means provided by the provider and which fulfill his desires and meet his needs (Reinartz & Kumar, 2002). Jeng & Fesenmaier (2002) asserted to collect information about the tourist destination before travelling and the purpose is to lessen the risks of selecting a destination that does not meet their need and for their decision to be correct.

In addition, the study conducted by (Leung, et al., 2013) indicates the important role of advanced technology in EWOM and in social communication, surfing websites, watching the films related to the product, making virtual visit to the tourist destination and getting acquainted with the electronic services presented by the hotel or the tourist destination. Smith (2000) stated that information program and advanced electronic devices are the most important program of the programs used by the hotel to enhance loyalty like service program, discount program and local programs and else from which advances technology is the most important.

2.4 Green Hotels

Green hotels are those which seek to be more suitable to the environment through the effective use of energy and rationalizing the use of water and resources in addition to providing excellent services. The environment friendly hotel is the one which preserve the natural environment and lessens pollution which preserves the natural environment and lessens pollution as well as using organic material and optimal use of technology (Mensah, 2007). It provides the

customers with instructions how to ideally use power without waste during their stay and it trains its employees on that and shares with the local society in preserving the environment and natural resources. Those hotels concentrate on using detergents that do not contain toxic materials, prevent smoking, focus on using renewable energy and recycle waste. Lee, et al. (2010) asserted that there has been general attention to the environment, and the first concern with hotels was to apply the governmental laws to preserve the environment, the alternative power and recycling for the financial benefit. The hotels concentrated on the environmental aspect to enhance the competitiveness in the hotel sector and their study affirmed the recognition, interaction and the comprehensive image of the tourist about green hotels. The results of the study showed that there is relationship between the comprehensive or total image and green hotels and its effect on the tourist behavior in terms of satisfaction and advising friends to stay in that satisfaction and advising friends to stay in that hotel. Various managements recognized the importance of green management in creating an image and loyalty with the customers and enhancing the market share of hotels which became the main part in the strategic and operational plan for most of the hotels in this age in most countries of the word (Butler, 2008; Alananzeh, 2017). The study of Kim & Han (2010) revealed that there is awareness among tourist and that they have the desire to transact and cooperate with green hotels and to pay extra sums of money to stay in green hotels.

3. Research Methodology

This section provides the methodology applied in the current study. It consists of the research model, operational definitions of the study's independent and dependent variables, research hypotheses, besides data collection tool and research population and sample.

3.1 Research Model

The elements of this research are established based on preceding literature, either theoretically or empirically. Indeed, this study used variables that are common in hotel management literature. Figure 1 represents a model for the study that shows the independent variables, the dependent variable, and the proposed relationship between them.

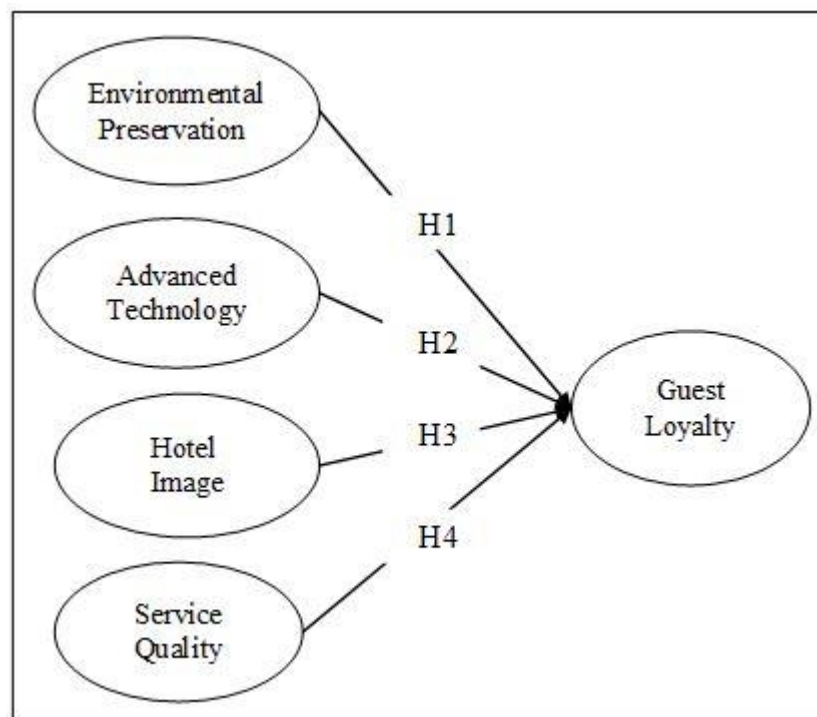


Figure 1. Research Model

3.2 Operational Definitions

Adapted from (Sasidharan, et al., 2002; Mensah, 2007; Chan, et al., 2017), the current research considers four

independent variables namely environmental preservation, advanced technology, hotel image, and service quality. Guest loyalty, the dependent variable, is adapted from (Lee, et al., 2009; Breiby & Slåtten, 2015; Kim, et al., 2015) and measured through seven items.

3.3 Research Hypotheses

In order to test the research model, the study is hypothesized as follows:

H1: There is a statistically significant impact of environmental preservation on guest loyalty.

H2: There is a statistically significant impact of advanced technology on guest loyalty.

H3: There is a statistically significant impact of hotel image on guest loyalty.

H4: There is a statistically significant impact of service quality on guest loyalty.

3.4 Population and Sampling

The targeted population of this study consisted of five star hotels in Aqaba city in Jordan. However, 206 survey questionnaires were returned from respondents and considered 193 after eliminating the incomplete ones. The primary data was collected through a drop-and-collect survey technique. The surveys were distributed to the receptionist employees working in these hotels that agreed to participate in the study. The questionnaire consisted of two sections; the first section in questionnaire presents general personal information about a respondent, the gender, age, academic level, employment status, travel reasons, and which hotel do they prefer to stay in. The second section includes questions to measure the independent and dependent variables based on their operational definitions.

4. Data Analysis and Results

In order to explore the impact of environmental preservation, advanced technology, hotel image, and service quality on guest loyalty, in which these variables have been measured using 5-points Likert scale that varies between strongly disagree =1 and strongly agree =5. Also, reliability and validity analyses were conducted, descriptive analysis was used to describe the characteristic of sample and the respondent to the questionnaires besides the independent and dependent variables. Furthermore, a multiple regression analysis was employed to test the research hypotheses.

4.1 Validity and Reliability

Validity and reliability are two important measures to determine the quality and usefulness of the primary data. Validity is about accuracy and whether the instrument measures what it is intended to measure while reliability is about precision; it is used to check the consistency and stability of the questionnaire. Indeed, the researchers depended on scales and items that were previously developed and used by other researchers with similar interest. Also a draft of the questionnaire was formulated, and then it was reviewed by four academic lecturers-who have a sufficient knowledge and experience in this scope- to insure that each item is measuring what is intended to be measured, and to avoid the ambiguity and complexity in the phrasing of questions. The reliability of the instrument was measured by the Cronbach's alpha coefficient. Further, some scholars (e.g. Bagozzi & Yi, 1988) suggested that the values of all indicators or dimensional scales should be above the recommended value of 0.60. Table 1 represents the results of Cronbach's alpha for the independent and dependent variables. Cronbach's alpha coefficients of all the tested variables are above 0.60 which suggesting the composite measure is reliable.

Table 1. The Cronbach's alpha coefficients of study variables

Variables	Number of items	Cronbach alpha
Environmental preservation	13	0.930
Advanced technology	6	0.847
Hotel image	8	0.927
Service quality	15	0.947
Guest loyalty	6	0.931

4.2 Respondents Demographic Profile

As indicated in Table 2, the demographic profile of the respondents for this study showed that they are typically males from Jordan, most of them less than 30 years old, the majorities hold bachelor degrees; most of them earn less

than 1000 \$ monthly; came to Aqaba city for leisure purposes, and the majorities prefer Movenpick and Intercontinental Hotels respectively.

Table 2. Description of the respondents' demographic profiles

Category	Category	Frequency	Percentage%
Gender	Males	103	53.4
	Females	90	46.6
	Total	193	100
Age	18 years - less than 25	119	61.6
	25 years - less than 30	45	23.3
	30 years - less than 40	25	13.0
	More than 40 years old	4	2.1
	Total	193	100
Education level	Less than high school	14	7.3
	High school graduate	24	12.4
	Diploma	17	8.8
	Trade/technical/vocational certificate	20	10.4
	Bachelor	106	54.9
	Master	10	5.2
	Doctorate	2	1.0
Total	193	100	
Personal income (\$)	Less than 500	79	40.9
	500- less than 1000	83	43.0
	More than 1000	31	16.1
	Total	193	100
Nationality	Jordanian	120	62.2
	Arabic	35	18.1
	Overseas	38	19.7
	Total	193	100
Employment status	Manager	43	22.3
	Self-employed	70	36.3
	Technician, nursing, etc	40	20.7
	Student	13	6.7
	Doctor, lawyer, or teacher	27	14.0
	Total	193	100
Travel reason	Conferences and exhibitions	67	34.7
	Leisure	126	65.3
	Total	193	100
Hotel residency	Double Tree/Helton	37	19.2
	Movenpick	53	27.5
	Kimpensky	32	16.6
	Oryx	25	13.0
	Intercontinental	46	23.7
	Total	193	100

4.3 Descriptive Analysis

In order to describe the responses and thus the attitude of the respondents toward each question they were asked in the survey, the mean and the standard deviation were estimated. While the mean shows the central tendency of the data, the standard deviation measures the dispersion which offers an index of the spread or variability in the data (Sekaran & Bougie, 2013). In other words, a small standard deviation for a set of values reveals that these values are clustered closely about the mean or located close to it; a large standard deviation indicates the opposite. The level of each item was determined by the following formula: (highest point in Likert scale - lowest point in Likert scale) / the number of the levels used = $(5-1) / 5 = 0.80$, where 1-1.80 reflected by "very low", 1.81-2.60 reflected by "low", 2.61-3.40 reflected by "moderate", 3.41-4.20 reflected by "high", and 4.21-5 reflected by "very high". Then the items were being ordered based on their means. Tables 3 and 4 show the results.

Table 3. Overall mean and standard deviation of the study's variables

Type of Variable	Variables	Mean	Standard Deviation	Level	Order
Independent Variables	Environmental preservation	3.8473	0.86597	High	3
	Advanced technology	3.7176	0.91485	High	4
	Hotel image	3.9631	0.79345	High	1
	Service quality	3.8974	0.74616	High	2
Dependent Variable	Guest loyalty	4.1485	0.88525	High	

As presented in Table 3, data analysis results have shown that guests' hotel image in the five-star hotels in Aqaba city located in Jordan is applied to a high level in which the mean score is 3.96, followed by variables of service quality, environmental preservation, and advanced technology; whereas guest loyalty is applied to a greater extent with a mean of 4.14. Table 4 demonstrates the mean, standard deviation, level, and order scores for the items for each variable.

Table 4. Mean and standard deviation of the study's variables

	Mean	SD	Level	Order
Environmental preservation				
The hotel defines special smoking places	4.35	1.061	Very high	1
The hotel uses posters in the rooms to explain the hotel 's policy towards the preservation of the environment	4.01	1.099	High	4
The hotel offers guests bulletins awareness of energy conservation	3.84	1.203	High	6
The hotel uses posters for environment	3.76	1.189	High	8
The hotel uses automatic systems for energy management in the rooms such as card system	4.10	1.085	High	2
The hotel uses a special controller for the heating and cooling system to ensure control of vacant rooms	4.08	1.075	High	3
Administration encourages and participates initiatives to protect the environment	3.71	1.224	High	9
Administration provides customers with information on how to preserve the environment	3.65	1.159	High	12
The hotel puts posters on environmental products	3.69	1.277	High	10
The hotel uses natural products and healthy foods	3.66	1.236	High	11
There are lush gardens surrounding the hotel	3.88	1.143	High	5
The hotel uses recycle cans and empty bottles systems	3.46	1.299	High	13
The hotel uses the devices energy-saving lighting	3.83	1.198	High	7
Advanced technology	Mean	SD	Level	Order

The hotel uses robots in the room service	3.29	1.561	Moderate	6
The hotel uses technology developments in the rooms	3.61	1.186	High	4
The hotel uses advanced technology in the public safety and security	3.79	1.137	High	2
The hotel use IT system on room control	3.58	1.153	High	5
The hotel uses technology to entertain guests	3.67	1.234	High	3
Modern electronic devices are available in the hotel	4.37	0.932	Very high	1
Hotel image	Mean	SD	Level	Order
The hotel has a good reputation that make guests comfortable in dealing with them	4.30	0.926	Very high	1
The arrangement and interior design of the hotel are attractive	4.06	0.867	High	2
The hotel building is attractive	4.03	0.946	High	3
The hotel management ensures to employ a skilled staff	3.91	1.001	High	4
The hotel management pursues the complaints of guests and provides appropriate solutions	3.87	1.015	High	6
The hotel is committed to providing guests services on time	3.91	0.947	High	4
The presence of hotel's director does exist consistently among the hotel guests	3.75	1.042	High	7
World series that owns the hotel	3.89	1.040	High	5
Service quality	Mean	SD	Level	Order
The hotel offers the services required to achieve the satisfaction of guests	4.15	0.968	High	1
The hotel has the ability to complete the services, serviced accurately and confidently to achieve satisfaction for guests	3.97	0.869	High	3
The workers at the hotel have the know-how and competence in dealing with the guests and to respond to them	3.91	0.928	High	5
You got what hotel has promised to offer	3.85	0.995	High	9
There is noticeable concern for persons with special needs and the elderly	3.88	1.001	High	6
The services provided by the hotel are confidently	3.88	1.008	High	6
The is a strong interest by the staff of the hotel towards permanent hotel customers	3.98	0.941	High	2
The workers in the hotel are truthful in dealing with guests	3.92	0.984	High	4
The hotel offers incentives and rewards programs for its customers	3.79	1.020	High	11
The hotel offers a safe transfer by credit card process	3.86	0.977	High	8
Employees who provide services have the required skill and professionalism	3.85	0.946	High	9
The staff were kind and enjoy the spirit of friendship	3.87	0.999	High	7
The hotel confirms to respect the privacy of customers	3.85	1.017	High	9
The presence of the female element of staff does exist	3.82	1.047	High	10
The hotel provides comfortable bed and headrest	3.87	1.045	High	7
Guest loyalty	Mean	SD	Level	Order
I will be a permanent customer in the future of this hotel	4.21	1.030	Very high	2
I will continue as a customer to this hotel even if it raises prices	3.93	1.100	High	6
I will speak positively about this hotel	4.38	0.956	Very high	1
I will encourage friends and relatives to be customers of this hotel	4.16	0.968	High	3
The provided services from this hotel deserve the amount I pay	4.08	1.012	High	5
I will always enjoy staying at this hotel	4.13	1.089	High	4

4.4 Hypotheses Testing Results

The current research is mainly seeking to investigate the impact of environmental preservation, advanced technology, hotel image, and service quality on guest loyalty of guests in the five-star hotels in the city of Aqaba. Consequently, in order to test the hypotheses developed for this study, multiple regression technique was used. Further, the level of significance (α -level) was chosen to be 0.05 and the probability value (p-value) obtained from the statistical hypotheses test is considered to be the decision rule for rejecting the null hypotheses (Creswell, 2009). If the p-value is less than or equal to α -level, the null hypothesis will be rejected and the alternative hypothesis will be supported. However, if the p-value is greater than the α -level, the null hypothesis cannot be rejected and the alternative hypothesis will not be supported. In addition, normality of the independent variables and the absence of multi co-linearity problem (a case of multiple regression in which the independent variables are themselves highly correlated) were checked. According to Pallant (2005), most of the values should be inside the adequate ranges for normality (i.e. -1.0 to +1.0). For this purpose, skewness and Variance Inflation Factor (VIF) were investigated; Table 5 includes the results.

Table 5. Skewness and VIF for the independent variables

Variables	Tolerance	VIF	Skewness
Environmental preservation	0.718	1.393	-1.021
Advanced technology	0.728	1.374	-0.677
Hotel image	0.482	2.075	-1.020
Service quality	0.524	1.907	-0.734

As can be noticed from Table 5, the skewness values were within the normal values (-1.0 to +1.0) suggesting that the data of the independent variables is normal. The VIF values were less than the critical value (10) which is most common among the most studies, suggesting no multi co-linearity problem among the independent variables. However, the results of testing the four hypotheses are demonstrated in Table 6.

Table 6. Result for the study model (b)

Variable	r	R ²	f	Sig (f)	β	t	Sig (t)
Environmental preservation	0.655	0.429	35.246	0.000a	0.383	4.354	0.000
Advanced technology					0.026	0.399	0.690
Hotel image					0.318	3.999	0.000
Service quality					0.207	2.713	0.007

a. Predictors: (Constant), Environmental preservation, Advanced technology, Hotel image, Service quality

b. Dependent variable: Guest loyalty

Refer to Table 6 the multiple correlation coefficient $R = 0.655$ indicates that there is a strong positive correlation between the independent variables (environmental preservation, advanced technology, hotel image, and service quality) and guest loyalty. The R^2 indicated the generalizability of the model. It allows us to generalize the results taken from the respondents to the whole population. In this case it equals 0.429. The results showed that F-ratio for these data is equal to 35.246, which is statistically significant at $p < 0.05$. Therefore, we conclude that there is a statistically significant impact of the independent variables on guest loyalty.

The β indicates the individual contribution of each predictor (independent variable) to the model, if other predictors are held constant. Table 6 shows the standardized coefficients for each independent variable. The values of β for environmental preservation, hotel image, and service quality are 0.383, 0.318, and 0.207 respectively; and are positive. While for advanced technology, the value of β is 0.026 which has a small value compared with other predictors. The level of effect of these variables depends on the β value, the higher β value the higher effect on dependent variable. We can infer from the values of beta that environmental preservation has the highest contribution in the model, followed by hotel image, and then service quality.

5. Discussion and Conclusions

The aim of this study is to investigate the effects of environmental preservation, advanced technology, hotel image, and service quality on guest loyalty. The results emphasize the importance of all these constructs on creating customers' loyalty and have important implications for marketers and tourism stakeholders in Aqaba city. Most factors that shape and form guest's loyalty may be controlled, created, and improved by hoteliers.

The image of the hotel found to be the most important construct in loyalty to that hotel according to the respondents' opinions. The company that insists on branding and marketing its image will generate high profit when reach the good unsuspected reputation. The hotel has a good reputation that makes guests comfortable in dealing with. The image of the hotel is consisted of many layers that form the holistic image of that hotel. The professional skillful employees, the interior design of the hotel, the attractiveness of the building and the surrounding area, serving guests on time and the fast respond to their complains, and the presence of the manager and supervisors among the hotel guests are some of the image layers that construct the overall image of the hotel which is an important part in creating guests loyalty and increases hotel's market share and revenue. These findings are constant with the results of Kandampully & Suhartanto (2000) who claimed that hotel image and customer satisfaction are important factors in determining customer loyalty.

The findings of the study also pointed out the respondents claimed that service quality is critical in shaping guests' loyalty. Previous studies stated that service quality is connected with guests' satisfaction. Staff should give strong interest toward hotel permanent guests; they should be serviced accurately and confidently to achieve their satisfaction. Employees, in hotel industry, should work on building mutual trust with their customers through understanding different cultures in order to understand and how to deal with each one according to customers' own culture. It is the responsibility of the management to offer their employees a comprehensive and advanced training courses focused on cultures existed in the globe. The staff should be kind and enjoy the spirit of friendship. In addition, service quality includes the concern towards kids and persons with special needs and the elderly. ALSarayreh, et al. (2011) and Jayawardena, et al. (2013) insisted on the importance of the overall service quality in hotel's innovation and sustainability- driven management strategy.

Findings also revealed that hotel guests are keen to towards environmental preservation . Therefore, the hotel should define special smoking places, automatic systems for energy management in the rooms such as card system, a special controller for the heating and cooling system, and energy-saving lighting should be used, green gardens surrounding the hotels should increased which makes guests' staying comfortable. Guests who are empathized with nature are looking for green hotels that offer natural products and healthy foods, launch participates initiatives to protect the environment, recycle cans and empty bottles systems, and that puts posters on environmental products. Moreover, hotels that provide modern electronic devices are among hotels that attract tourists. Tourists who became experts in travel and hotel reservation are mostly looking for those hotels that uses advanced technology in the public safety and security, technology to entertain guests, and the developed technology in the rooms. But results showed that tourists ranked advanced technology factor as the least important factor in customer loyalty. Furthermore, several researchers consider the information systems and in particular the information technology (IT) and its flexibility as an enabler to achieve the desired competitive advantages, and as a crucial support to operational and strategic business decisions (Al Azmi, et al., 2012; Alenezi, et al., 2015; Alkalha, et al., 2012; Almajali & Tarhini, 2016; Altamony et al., 2012; Kateb, et al., 2015; Maqableh & Karajeh, 2014; Masa'deh, 2012, Masa'deh, et al., 2016; Obeidat, et al., 2013; Shannak, et al., 2010, Tarhini et al., 2016; Vraskikh et al., 2016); thus further research is required to examine the role of such IT applications in enhancing the managerial decisions. In addition, scholars (e.g. Masa'deh, et al. 2008; Hunaiti, et al., 2009; Masa'deh & Kuk, 2009; Alshurideh, et al., 2012; Hajir, et al., 2015; Kannan & Gharibeh, 2013; Masa'deh & Shannak, 2012; Masa'deh, et al. 2013; Masa'deh, et al. Masa'deh, et al. 2017; Obeidat, et al., 2012, 2016; Shannak & Alkour, 2012; Tarhini, et al., 2015a, 2015b) emphasize the need for large firms to integrate their IT systems with their KM strategies and processes in order to survive in their highly competitive business environments, which in turn could accelerate the managerial decisions as well.

In conclusion, this study highlighted the importance of environmental preservation and image in creating and enhancing customer loyalty. The results of the hypotheses testing revealed that there is a strong relationship between environmental preservation systems applied in the hotel and guest's intention to revisit, to recommend, and exhibit loyalty. Also, results showed that hotel image and service quality are important predictors of guest loyalty. But results of the hypotheses testing showed that advanced technology had no impact on guest loyalty. This could be justified that travellers nowadays are using their own smart phones which offers them all information and services they need. The competition between IT companies is fierce and has no limits or borders. These companies are trying

to provide their customers with everything covering all aspects of life.

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