

Evaluating Innovation Activities in Hotels Using Importance Performance Analysis

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Abstract

Despite the importance of hotel service innovation in the hospitality industry, literature revealed a gap relevant to the lack of studies interested in this field. Thus, the current study aims to shed the light on the importance and perception guest of hotel service innovation using Importance-Performance Analysis (IPA). The study employed a self-administered questionnaire that comprised 79 items including questions about Innovative hotel types, customization of service, use of information technology, process innovation, marketing-focused innovation, brand differentiation, pricing innovation, and guest's perceived value. A total of 280 questionnaires were randomly distributed to a sample of guests who stayed in the hotels were surveyed. Among the questionnaires returned, 220 were useable ones, representing a response rate of 78.6 %. The variance analysis tests were used to identify the presence of significant differences among the guests related to the importance and perception of hotel service innovation and perceived value. In addition, importance-performance analysis was conducted using SPSS. The IPA showed that hotels need better preparation in the points of “the hotel offers special price,” and “the hotel provides organic food”.

Keywords: Service innovation; process innovation; marketing-focused innovation; brand differentiation; pricing innovation.

Introduction

The hotel industry is one of the industries that most benefit from service innovation. This benefit appears to the customer's point of view in the availability of the hotel services which can be chosen easily, but this represents a difficulty for hotel managers because they are trying to distinguish and provide new and innovative services from their counterparts from other hotels. The hotel should provide new and innovative services to customers to solve this challenge. Also, hotel managers need to make proactive changes to stay competitive by focusing more intensely on quality, information technology, and customer predilection (Karmarkar, 2004). Travelers are now different from the past as travelers become more inclined to hotels that provide the best value propositions under the current budget (Olsen & Connolly, 2000).

Perceived value in the hospitality industry means the perceptions that guests hold before entering the service provider's facility. The perceptions might include the information provided to the customer, the booking procedure, and what the guest receives during service delivery (which might include the check-in procedure, guest assistance, physical facilities, and guest service).

In this context, the perceived value is composed of two components that are before and during service delivery (Komppula, 2005). Value is made evident through various elements, including room quality, hotel atmosphere, the quality of meals, and the availability of recreation and sports facilities (Ntimane & Tichaawa, 2017). Thus, the value has consisted of tangible and intangible things that vary from one place to another. Some customers might consider a service to be of high value, while others might not. Furthermore, the origination of perceived value that guests are used is critically related to hotels because the hotel industry is competitive compared to other industries (Nasution & Mavodo, 2008).

Although the importance both of hotel service innovation, guest's perceived value, and return intention in the hotel industry, literature revealed a gap related to the lack of studies regarding the impact of hotel service innovation on guest's perceived value and return intention (Kessler *et al.*, 2015; Luoh *et al.*, 2014; Nieves *et al.*, 2014; Nieves & SegarraCiprés, 2015; Thomas & Wood, 2014; Tigu *et al.*, 2013).

LITERATURE REVIEW

Service innovation

Khuong and Giang (2014) explained that innovation is one of the most competitive advantages that make a company stands up to the fierce competition. Also, service innovation is perceived as the concept of service, a means of customer interaction, a system to provide services, or the concept of technology that is new or variable to a great extent. Moreover, Verma *et al.* (2008, p.7) defined service innovation as “*The introduction of new or novel ideas which focus on services that provide new ways of delivering a benefit, new service concepts, or new service business models through continuous operational improvement, technology, investment in employee performance, or management of the customer experience*”. Furthermore, the services industry covers a large scale of activities, and many studies support the types that affect innovation services, namely innovative hotel types, customization of service, use of information technology, process innovation, marketing-focused innovation, brand differentiation, and pricing innovation (Khuong & Giang, 2014).

Innovative hotel types

Veerakumaran (2009) pointed out that innovation in the service is intended to provide new services as well as the development of the available services. This term has been developed into a source of innovative service (Victorino *et al.*, 2005) and one of the best examples of the innovative service in terms of the type of hotel is a boutique hotel, which is believed to be back in the early 1980s (Binkley & Christina,1999). Horner and Swarbrooke (2005) defined a boutique hotel as “*highlighted that a boutique hotel could be smaller in size with personalized services*”. Also, Hsu and Lee (2009) stated that green hotel is one of the innovative hotel types that are increasingly in demand from different markets because it is distinguished from other types of hotels.

Also, because of increasing pressure on the hospitality industry to be more environmentally friendly (Foster *et al.*, 2000; Lynes & Dredge, 2006; Manaktola & Jauhari, 2007). Also, Khuong and Giang (2014) revealed that the healthcare hotel is considered an innovative form of service in terms of hotel type. Furthermore, (Han 2013; Han & Hyun 2014) identified healthcare hotels as a target market for customers who want to have access to healthcare / aesthetic services besides travel. In addition, the most important services offered by health care hotels are spa treatment, diet programs, smoking-cessation/drinking -cessation programs, skin treatments, beauty centers, etc. (Chen *et al.*, 2011; Hsieh *et al.*, 2008; Lu & Shiu, 2009; Mak *et al.*, 2009).

Customization of service

Victorino *et al.* (2005) stated that customizing service is a type of service innovation for hotel guests. Moreover, Kaplan and Haenlein (2006, p.168) defined customization as “*the ‘build-to-order approach to deliver a product or service that fits the needs of the customer’*”. Gagnon and Roh, (2008) explained that customization is important in the service industry to provide the greatest satisfaction to customers and also, customization of service has a direct impact on service quality, customer satisfaction, loyalty and to ensure that operations run smoothly and efficiently (Kasiri *et al.*, 2017).

Use of information technology

Victorino *et al.* (2005) noted that the use of information technology is a type of service innovation for hotel guests. Technological innovation is of great importance to any company, as it increases market share, production, quality, customer satisfaction, and availability, makes customers feel comfortable, and raise the sense of control (Dixon *et al.*, 2009). Also, Bilgihan *et al.* (2011) stated that information technology is one of the most important competitive advantages in the hotel industry.

Process innovation

Wu (2013, p.64) defined process innovation as “*A change or implementation of new procedures, which affects the routine works, activities, and processes and can enable an organization to achieve improvement in speed, quality and cost, meet the customer demands and adapt to the changing environment*”. More recently, several authors (Dzhandzhugazova *et al.*, 2016; Nhepera, 2017) stated that process innovation has become more important in the hospitality industry. In addition, the process innovation in the service starts from the stage of preparation to the stage of providing the service to customers and attention must be given to the details of the preparation until the service is provided. Attention should be given to providing accurate service and high quality (Khuong & Giang, 2014).

Marketing-focused innovation

Khuong and Giang (2014) revealed that marketing-focused innovation is a type of service innovation in the hotel industry.

Also, Aldebert *et al.* (2011, p.1211) defined marketing innovation as “*implementation of a new marketing method involving significant changes to product design or packaging, product placement, product promotion or pricing*”. Also, Hankinson (2004) reported that marketing innovations in the hospitality industry include new methods and channels. These new channels make significant changes in product design as well as pricing (Manual, 2005). Furthermore, Nhepera (2017) stated that marketing innovation is an important tool in hotels because it uses to integrate tangible hotel products with physical products. Also, Nicolau and Santa-María (2013) explained that marketing innovation is very important because of its positive impact on hotel performance, which made researchers consider it a separate category from other means of innovation (Hjalager, 2010). Moreover, the marketing performance of hotel innovation includes several indicators such as satisfaction, value, quality, and improved marketing results for the hotel through these indicators that may improve sales and performance in hotels (Campo *et al.*, 2014).

Brand differentiation

Berry *et al.* (2006) identified that brand differentiation is one form of service innovation. Khuong and Giang (2014) pointed out that brand differentiation was used as a "brand image" concept because of its impact on service innovation. Jin *et al.* (2012, p. 534) defined brand image as “*a subjective and perceptual phenomenon that is formed through consumer interpretation, whether reasoned or emotional*”. Also, Saleem and Raja (2014) stated that one of the most important assets of the firm is the brand. Zhang and Mao (2012) pointed out that the image of the hotel carried by the brand is divided into tangible (e.g. the design of the hotel) and intangible (e.g. employee behavior). Jensen and Hansen (2007) identified that the brand of the hotel is supported to build a strong image in the minds of customers towards the hotel's brand and hotels can also get a superior advantage among competitors by brand image of these hotels (Keller, 2003). Also, Sun *et al.* (2015) identified that the brand affects customers because they seek global chain hotels to maintain brand image and enhance their loyalty through the consistency of service in all its hotels to meet the expectations of the guests. A strong consumer relationship with the hotel brand also affects their choice of a hotel without the other (Mattila, 2007).

Pricing innovation

Khuong and Giang (2014) noted that pricing innovation is a type of service innovation in the hotel industry. Hinterhuber and Liozu (2013, p. 267) defined innovation in pricing as “*instances in which companies innovate their pricing strategies, tactics, or organization, or where companies use an understanding of consumer psychology to change customer perceptions of value and price*”. Moreover, de la Peña *et al.* (2016) stated that hotels seek to achieve the pricing innovation because of the positive impact where they allow discrimination in a competitive framework, it is one of the main impacts to decide on accommodation (Hung *et al.*, 2010) and it is one of the major important

characteristics of the hotel sector to determine revenues. (Anderson & Xie, 2010).

Perceived value

Schoeman *et al.* (2016) revealed that the perceived value is the evaluation or interpretation of information beliefs about the characteristics of the product, the performance of those characteristics, the benefits got from the product, and the value paid by the customer. Bajs (2015, p124) define perceived value as "*An individual, cognitive-affective evaluation of the product or service that occurs in the purchasing process and is based on a comparison between the benefits and costs arising out of the offer and the offers of competitors in the market, and which varies with the changing circumstances of time, place, and situation in which the assessment is made*". Also, Sweeney and Geoffrey (2001) classified perceived value into emotional value, social value, price value, and quality value. In addition, the perceived value is of major importance to companies because they predict the behavior of the purchase, decision making and achieve a competitive advantage and also play an important role in attracting customers (Cheng *et al.*, 2009; Chi *et al.*, 2008; Soltani & Gharbi, 2008). Furthermore, Chiang and Lee (2013) and Li *et al.* (2012) noted that guest's perceived value was significant in the hotel selection therefore hotels seek to deliver perceived value to guests to improve their efficiency, increase the number of guests that visit these hotels, its effect on guest's satisfy and spread positive word-of-mouth communications to other guests (Asgarpour *et al.*, 2015).

Importance-Performance Analysis (IPA)

Importance-performance analysis (IPA) was first introduced by Martilla and James in 1977. In the current study, IPA matrix consists of two axes: the column axis for importance and the horizontal axis for the performance of the hotel service innovation and guest's perceived value mentioned previously (see figure 1). The IPA matrix is divided into four quadrants. Quadrant A "Concentrate here" involves hotel service innovation and guests' perceived value with high importance and low performance. These points are the major weaknesses and require instant interest for improvement by the hotels. Quadrant B "Keep up with the good work" involves hotel service innovation and guest's perceived value with high importance and high performance. These points are the major strengths for maintaining the competitive feature of the hotels. Quadrant C "Low priority" involves hotel service innovation and guests' perceived value with low importance and low performance. Therefore, these points do not need additional effort by the hotels. Quadrant D's "Possible overkill" involves hotel service innovation and guests' perceived value with low importance and high performance. Therefore, these points evolve or change to be important to guests (Martilla & James, 1977).

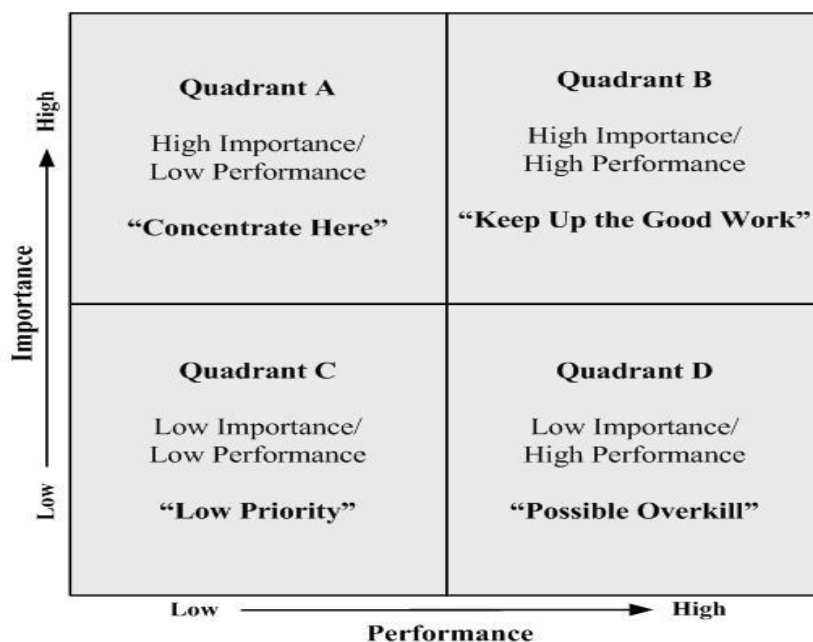


Figure 1: The importance-performance matrix (Adapted from Martilla & James, 1977, p. 78)

Methodology

A face-to-face data collection by questionnaires was conducted. The questionnaire form was adapted and revised from previous studies (Brochado *et al.*, 2016; Han, 2013; Hjalager, 2010; Huang, 2016; Karki & Panthi, 2018; Khosravi *et al.*, 2014; Lien, 2015; Martin-Rios & Ciobanu, 2019; Nhepera, 2017; Raza *et al.*, 2012; Shirase, 2014; Veerakumaran, 2009; Wanjiku, 2018). The questionnaire was fine-tuned by distributing it to a group of twenty experts to test readability, understandability, and ease of filling the questionnaire and to make sure that the design of complexity would work as expected, the sample used in the pilot test included both Arabic and English, and all of them had a degree in hospitality management. The questionnaire contained three parts. The first part included 34 items and it asked respondents to evaluate the level of perception in the hotel service innovation and guest's perceived value on a 3-point Likert type scale: "disagree", "neutral", and "agree". The second part included 34 items and it asked respondents to evaluate the level of importance of the hotel service innovation and guest's perceived value on a 3-point Likert type scale: "not important", "neutral", and "important". The last section contained demographical questions such as gender, age, and level of education. The questionnaire was directed to in-house guests in five-star hotels in Cairo. A total of 280 questionnaires were distributed randomly to the in-house guests in five-star hotels in Cairo (i.e., 35 forms in each one of the following hotels: in Le Méridien Pyramids, Fairmont Nile City Hotel, Ramses Hilton Hotel, Intercontinental Citystars Cairo, Four Seasons Hotel Cairo at Nile Plaza, the Nile Ritz-Carlton, Sheraton Cairo Hotel, and Movenpick Hotel Casino Cairo). A total of 220 valid questionnaires were received yielding a 78.6 % response rate.

Statistical analysis was applied to the questionnaire variables using the Mann-Whitney U test (a technique used to test for differences between two independent groups on a continuous measure) and the Kruskal-Wallis test (a non-parametric test to the analysis of variance between groups) (Pallant, 2007). A Mann-Whitney U test was used in this study to explore the variance between guests' gender and study dependent variables to determine if there is a significant difference between them. While Kruskal-Wallis test was adopted to explore the variance between guests' age and level of education regarding the study dependent variables to determine if there is a significant difference among them. Moreover, importance-performance analysis (IPA) was conducted using SPSS (i.e., Scatter plot).

RESULTS

Demographics

As previously mentioned, the current study investigated the viewpoint of in-house guests in five-star hotels in Cairo. Among the 220 guests who participated in the study, nearly 61% were male 39% were female, and the majority (37.3%) were from 31 years to 40 years. Most of the surveyed industry guests were a university degree (82.3%).

Gap Analysis between Importance and Performance of Hotel Service Innovation

The most important hotel service innovations were: "the hotel offers special facilities and services" (M= 2.79), "the hotel has a very flexible check-in and out time" (M=2.83), "the hotel offers information technology and advanced facilities" (M=2.86), "the hotel improves and provides new services" (M= 2.84), "the hotel uses social networks (e.g. Facebook, Twitter, and Instagram)" (M=2.83), "the hotel provides a clear branding and recognizable image" (M=2.80), "the hotel offers the best possible price plan that meets the guest's needs" (M=2.81), and "serviced items are hygienic, adequate and Sufficient" (M=2.92).

In addition, guests gave the highest perception scores to: "the hotel offers special facilities and services" (M = 2.59), "the hotel actively seeks customer feedback and complains" (M = 2.65), "the hotel provides online reservation system and room confirmation" (M = 2.60), "the hotel improves and provides new services" (M = 2.57), "the hotel uses social networks (e.g. Facebook, Twitter, and Instagram)" (M = 2.60), "the hotel provides a clear branding and recognizable image" (M = 2.63), "the hotel offers the best possible price plan that meets the guest's needs" (M = 2.45), and "serviced items are hygienic, adequate and Sufficient" (M = 2.49).

The gap analysis between the importance and perception of the thirty-four points (see Table 1) revealed a significant difference between guests' expectations of the importance of points were higher than hotels' performance. The biggest gaps found to be in hotel service innovation and guest's perceived value: "the hotel provides homey and unique interior design" and "the hotel provides organic food" (df= 0.37), "The hotel has a very flexible check-in and

out time” (df= 0.3), “The hotel offers information technology and advanced facilities” (df= 0.27), “The hotel offers innovative and creative ideas” (df= 0.31), “the hotel provides loyalty programs” (df= 0.33), “the hotel provides a clear branding and recognizable image” (df= 0.17), “the hotel offers the best possible price plan that meets the guest's needs” (df= 0.36), and “serviced items are hygienic, adequate and Sufficient” (df= 0.43).

Table 1: Gap analysis between importance and performance of hotel service innovation and guest's perceived value

	Importance		Performance		Difference
	Mean	IR	Mean	PR	
Innovative hotel types					
The hotel provides homey and unique interior design	2.77	3	2.40	5	0.37
The hotel offers special facilities and services	2.79	1	2.59	1	0.2
The hotel offers special price	2.5	6	2.30	6	0.2
The hotel provides organic food	2.78	2	2.42	4	0.37
The hotel reduces waste and pollution	2.73	4	2.48	2	0.25
The hotel uses energy-saving equipment	2.69	5	2.44	3	0.25
The hotel is convenient and provide physical treatment	2.22	8	2.02	8	0.2
The hotel offers a health care facilities and packages.	2.39	7	2.29	7	0.1
Customization of service					
The hotel has very flexible check in and out time	2.83	1	2.53	2	0.3
The hotel provides kids services and facilities e.g. kids club	2.35	3	2.29	3	0.06
The hotel allows hosting small pets in rooms	1.72	4	1.76	4	-0.04
The hotel actively seeks customer feedback and complains	2.82	2	2.65	1	0.17
Section three: use of information technology					
The hotel offers information technology and advanced facilities	2.86	1	2.59	2	0.27
The hotel provides an online reservation system and room confirmation	2.81	2	2.60	1	0.21
The hotel provides guest room lock access via guest's mobile phone	2.52	4	1.0	5	1.52
The hotel offers high-speed internet access for free in-room and in the public area	2.71	3	1.92	4	0.79
the hotel offers a touch screen for guest use with all information about the city	2.45	5	1.0	6	1.45
The hotel provides business facilities (e.g. voice mail service and multiple phones)	2.31	6	2.21	3	0.1
Section four: process innovation					
The hotel improves and provide new services	2.84	1	2.57	1	0.27
The hotel offers innovative and creative ideas	2.71	2	2.40	2	0.31
The hotel provides new or improved supporting activities (e.g. maintenance systems and operations for purchasing)	2.35	3	2.22	3	0.13
Section five: marketing-focused innovation					
The hotel uses social networks (e.g. Facebook, Twitter and Instagram)	2.83	1	2.60	1	0.23
The hotel uses mobile marketing tools (e.g. SMS, MMS, and voice marketing)	2.32	4	2.23	3	0.09
The hotel provides loyalty programs	2.53	3	2.20	4	0.33
The hotel gives special discounts	2.70	2	2.39	2	0.31

Section six: brand differentiation					
The hotel provides a clear branding and recognizable image	2.80	1	2.63	1	0.17
The hotel brand has a good reputation and a high level of service	2.72	2	2.61	2	0.11
The hotel brand is attractive and pleasing	2.54	3	2.45	3	0.09
Section seven: pricing innovation					
The hotel offers the best possible price plan that meets the guest's needs	2.81	1	2.45	1	0.36
The costs in the hotel are appropriate for what the guest's get	2.59	2	2.37	2	0.22
The hotel offers superior pricing options.	2.35	3	2.25	3	0.1
Section eight: perceived value					
The hotel provides consistent services	2.83	2	2.46	3	0.37
serviced items are hygienic, adequate, and Sufficient	2.92	1	2.49	1	0.43
The hotel is also convenient for disable guests	2.82	3	2.48	2	0.34

Notes: IR: Importance rank; PR: Performance rank

Importance Performance Analysis

IPA was undertaken as shown in Figure 2. From the hotel service innovation and guest's perceived value, two points (i.e., the hotel offers special prices and the hotel provides organic food) fell into Quadrant A “Concentrate here”. These points were the major weaknesses of the hotels. Twenty-one points (i.e., the hotel provides homey and unique interior design, the hotel offers special facilities and services, the hotel reduces waste and pollution, the hotel uses energy-saving equipment, the hotel offers a health care facilities and packages, the hotel has very flexible check in and out time, the hotel actively seeks customer feedback and complains, the hotel offers information technology and advanced facilities, the hotel provides online reservation system and room confirmation, the hotel improves and provide new services, the hotel offers innovative and creative ideas, the hotel uses social networks (e.g. Facebook, Twitter and Instagram), the hotel gives special discounts, the hotel provides a clear branding and recognizable image, the hotel brand has a good reputation and a high level of service, the hotel brand is attractive and pleasing, the costs in the hotel appropriate for what the guest's get, the hotel offers superior pricing options, the hotel provides consistent services, serviced items are hygienic, adequate and Sufficient ,and the hotel is also convenient for disable guests) fall into Quadrant B “Keep Up the Good Work”. These points were the major strengths for hotels. Eleven points (i.e., the hotel is convenient and provide physical treatment, the hotel provides kids services and facilities e.g. kids club, the hotel allows hosting small pets in rooms, the hotel provides guest room lock access via guest’s mobile phone, the hotel offers high-speed internet access for free in-room and in a public area, the hotel offers touch screen for guest use with all information about the city, the hotel provides business facilities (e.g. voice mail service and multiple phones), the hotel provides new or improved supporting activities (e.g. maintenance systems and operations for purchasing), the hotel uses mobile marketing tools (e.g. SMS, MMS and voice marketing), the hotel provides loyalty programs, and the hotel offers the best

possible price plan that meets the guest's needs) fell into Quadrant C “Low priority”. These points do not require additional effort by hotels.

The variance between guests’ gender, age, and education

The results of variance between guests’ gender, regarding their perception of hotel service innovation, perceived value, and return intention. Variance analysis results showed that there were statistically significant differences at 2 points out of 41 (i.e., $P < 0.05$). Consequently, no significant differences were detected between males and females in terms of their perception of hotel service innovation, perceived value, and return intention except that “the hotel offers superior pricing options” and “I will return and recommend to the hotel because of its innovative types”.

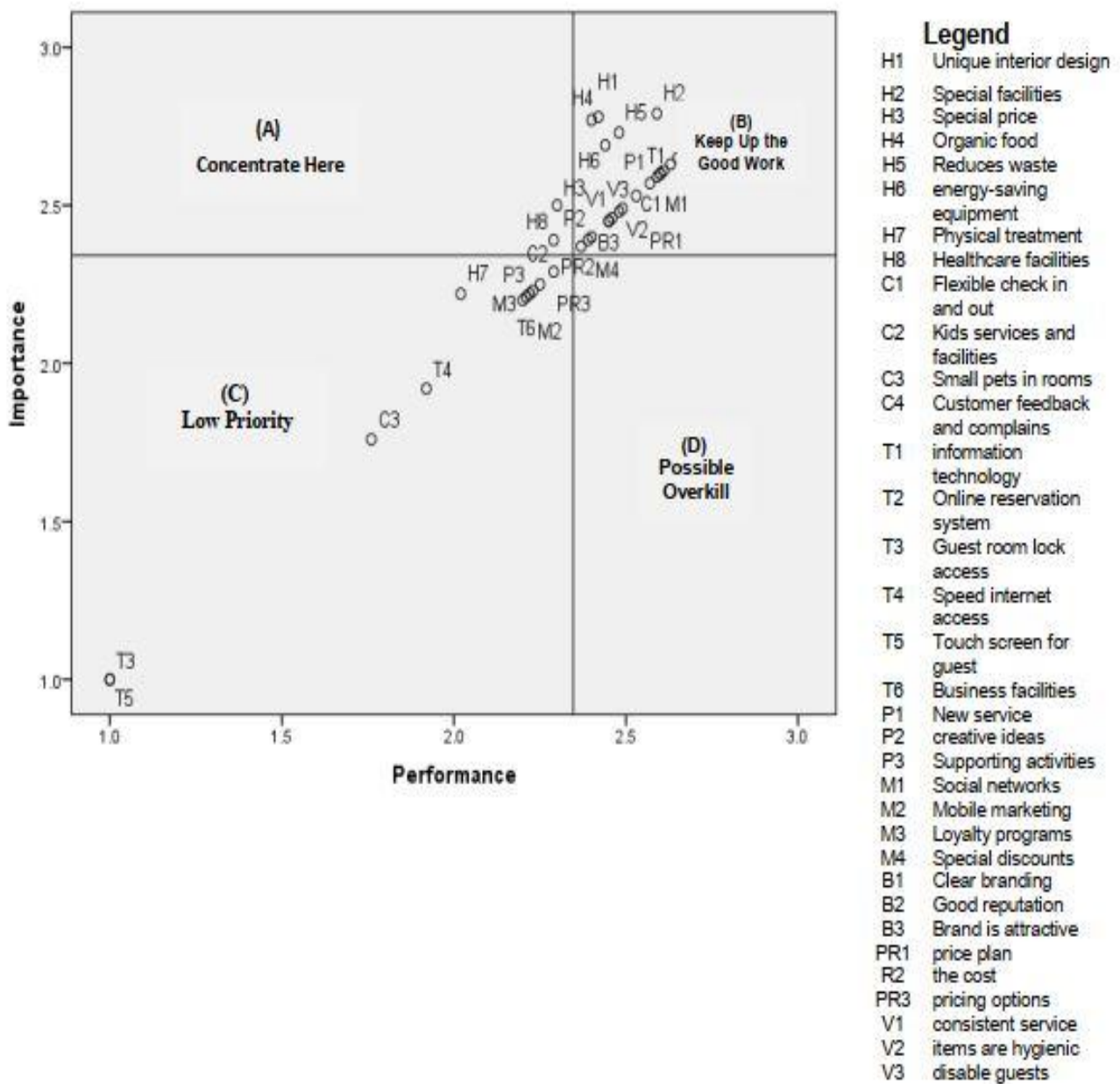


Figure 2: Importance-performance matrix as viewed of hotel service innovation and guest's perceived value

The percentage of those who participated in these points, 62% were male and 38% were female. A possible explanation of these results is that the male is more interested in price than females because females have often relied on others regarding the payment. In addition, as regards the point of the guest will return and recommend to the hotel because of its innovative types. The largest proportion of participants in this point was male, this is consistent with Chen (2017), who emphasized males' interest in service innovation in hotels more than females. The results of variance between guests' age, regarding their perception of hotel service innovation, perceived value, and return intention. Variance analysis results showed that there were statistically significant differences at 8 points out of 41 (i.e., $P < 0.05$). Consequently, no significant differences were detected guests' age in terms of their perception of hotel service innovation, perceived value, and return intention except that “The hotel provides kids services and facilities e.g. kids club”, “the hotel allows hosting small pets in rooms”, “the hotel actively seeks customer feedback and complains”, “the hotel offers information technology and advanced facilities”, “the hotel provides business facilities (e.g. voice mail service and multiple phones)”, “serviced items are hygienic, adequate and Sufficient”, “the hotel is also convenient for disable guests”, and “I will return and recommend to the hotel because of its services and facilities” the largest percentage of those who participated in this points for the category (31 to 40 years) 37%. This is consistent with previous studies by Cheung (2012), Creusen (2010), and Raza *et al.* (2012).

The results of variance between guests' education, regarding their perception of hotel service innovation, perceived value, and return intention. Variance analysis results showed that there were statistically significant differences at 7 points out of 41 (i.e., $P < 0.05$). Consequently, no significant differences were detected guests' education in terms of their perception of hotel service innovation, perceived value, and return intention except that “the hotel provides homey and unique interior design”, “the hotel provides organic food”, “the hotel provides online reservation system and room confirmation”, “The hotel offers high-speed internet access for free in-room and in a public area”, the hotel is also convenient for disabled guests”, “I will return and recommend to the hotel because of its innovative types”, and “I will return and recommend to the hotel because of its services and facilities” the largest percentage of those who participated in this points for the category (University/higher education) 82%. This is consistent with previous studies by Abdul Aziz *et al.* (2012), Berezan *et al.* (2014), Lee and Tussyadiah (2010), and Wang (2013).

Table 2: Variance between guests' gender, age, and education regarding their perception of hotel service innovation, perceived value (n =220)

	Mean rank			Chi-Square	Differences
	G	A	E		
Section one: Innovative hotel types					
The hotel provides homey and unique interior design	114.2	122.1	128.3	3.98	G<A, G<E
The hotel offers special facilities and services	117.9	124.1	128.6	6.78	G<A, G<E

The hotel offers special price	113.9	124.3	111.4	1.63	G<A, A>E
The hotel provides organic food	112.4	132.6	114.9	9.37	G<A, A>E
The hotel reduces waste and pollution	111.3	118.1	113.3	8.15	G<A, A>E
The hotel uses energy-saving equipment	111.2	121.1	112.3	4.94	G<A, A>E
The hotel is convenient and provide physical treatment	115.7	149.8	112.2	4.71	G<A, A>E
The hotel offers a health care facilities and packages.	110.8	127.3	112.4	3.58	G<A, A>E
Section two: customization of service					
The hotel has very flexible check in and out time	115.3	132.4	116.8	5.58	G<A, A>E
The hotel provides kids services and facilities e.g. kids club	117.8	169	112.5	11.66	G<A, A>E
The hotel allows hosting small pets in rooms	111.9	164.5	127.8	13.76	G<A, A>E
The hotel actively seeks customer feedback and complains	112.7	131.7	125.8	14.76	G<A, A>E
Section three: use of information technology					
The hotel offers information technology and advanced facilities	114.2	144.0	119.5	12.74	G<A, A>E
The hotel provides online reservation system and room confirmation	112.6	126.7	128.6	11.04	G<A, G<E
The hotel provides guest room lock access via guest's mobile phone	110.5	110.5	110.5	.000	G=A=E
The hotel offers high speed internet access for free in-room and in public area	114.1	136.1	121.3	4.08	G<A, A>E
The hotel offers touch screen for guest use with all information about the city	110.5	110.5	110.5	.000	G=A=E
The hotel provides business facilities (e.g. voice mail service and multiple phone)	114.5	134.8	121.8	13.18	G<A, A>E
Section four: process innovation					
The hotel improves and provide new services	112.1	120.7	119.9	10.57	G<A, A>E
The hotel offers innovative and creative ideas	117.1	126.2	112.5	4.19	G<A, A>E
The hotel provides new or improved supporting activities (e.g. maintenance systems and operations for purchasing)	113	123	118.8	4.59	G<A, A>E
Section five: marketing-focused innovation					
The hotel uses social networks (e.g. Facebook, Twitter and Instagram)	114.6	121.1	113.5	8.28	G<A, A>E
The hotel uses mobile marketing tools (e.g. SMS, MMS and voice marketing)	110.8	136.8	113	5.17	G<A, A>E
The hotel provides loyalty programs	112.1	133.4	112.8	5.18	G<A, A>E
The hotel gives special discounts	112.5	128.4	114.4	3.42	G<A, A>E
Section six: brand differentiation					
The hotel provides a clear branding and recognizable image	111.5	125.9	111	4.01	G<A, A>E
The hotel brand has a good reputation and a high level of service	113.7	126.3	111.1	4.18	G<A, A>E
The hotel brand is attractive and pleasing	112.5	142.6	117.3	6.88	G<A, A>E
Section seven: pricing innovation					
The hotel offers the best possible price plan that meets the guest's needs	111.8	129.6	115.4	8.88	G<A, A>E

The costs in the hotel are appropriate for what the guest's get	112.7	129.5	113.9	4.69	G<A, A>E
The hotel offers superior pricing options	116.9	140.5	112.4	5.40	G<A, A>E
Section eight: perceived value					
The hotel provides consistent services	110.9	141.6	116.7	8.79	G<A, A>E
serviced items are hygienic, adequate, and Sufficient	117.2	138.1	114.7	13.35	G<A, A>E
The hotel is also convenient for disabled guests	112.7	136.1	115.5	18.58	G<A, A>E

Notes: G: Gender; A: Age; E: Educatoion; * p <0.001= Significant difference.

Discussion and conclusions

The results of the importance-performance analysis (IPA) showed that two points (the hotel offers special prices, and the hotel provides organic food) fell into Quadrant A “Concentrate Here”. These points were of high importance and low-performance scores. Specifically, all guests agreed that hotels need better preparation. Hotel operators should be aware that special price is highly important to polarize more guests to hotels. In addition, hotels seek to increase organic food offered in it because of profit, care for health, and environment (Dević-Blanuša *et al.*, 2017; Khosravi *et al.*, 2014).

In addition, the IPA showed that twenty-one points fell into Quadrant B “Keep up the Good Work”. (i.e., the hotel provides homey and unique interior design, the hotel offers special facilities and services, the hotel reduces waste and pollution, the hotel uses energy-saving equipment, the hotel offers a health care facilities and packages, the hotel has very flexible check in and out time, the hotel actively seeks customer feedback and complains, the hotel offers information technology and advanced facilities, the hotel provides online reservation system and room confirmation, the hotel improves and provide new services, the hotel offers innovative and creative ideas, the hotel uses social networks (e.g. Facebook, Twitter and Instagram), the hotel gives special discounts, the hotel provides a clear branding and recognizable image, the hotel brand has a good reputation and a high level of service, the hotel brand is attractive and pleasing, the costs in the hotel appropriate for what the guest's get, the hotel offers superior pricing options, the hotel provides consistent services, serviced items are hygienic, adequate and Sufficient ,and the hotel is also convenient for disable guests) fall into Quadrant B “Keep Up the Good Work” . These points were ranked as high importance and high-performance scores by guests and hotels. These points received the highest importance scores in the studies of previous (e.g., Asgarpour *et al.*, 2015; Kazembe *et al.*, 2015; Meng *et al.*, 2008; Nhepera, 2017; Rubio *et al.*, 2014; Sayin & Karaman, 2019; Tag-Eldeen, 2018; Wang & Sparks,2014; Xu *et al.*,2015).

On the hand, the further analysis of the importance-performance matrixes (Figures 2) showed that eleven points with low priorities fell into Quadrant C. These points were characterized by low importance and performance levels (i.e., the hotel is convenient and provide physical treatment, the hotel provides kids services and facilities e.g. kids club, the hotel allows hosting small pets in rooms, the hotel provides guest room lock access via guest’s mobile phone, the

hotel offers high speed internet access for free in-room and in public area, the hotel offers touch screen for guest use with all information about the city, the hotel provides business facilities (e.g. voice mail service and multiple phone), the hotel provides new or improved supporting activities (e.g. maintenance systems and operations for purchasing), the hotel uses mobile marketing tools (e.g. SMS, MMS and voice marketing), the hotel provides loyalty programs, and the hotel offers the best possible price plan that meets the guest's needs). These points do not need additional effort by the hotels.

Finally, the variance analysis results showed that there were significant differences were detected in guests' gender, age, and education in terms of their perception of hotel service innovation and perceived value. In particular, male is more interested in price than females because females have often relied on others regarding the payment. Also, the guests from 31 to 40 years of age, are more interested in children's services and facilities. Also, these guests have preferred the hotel that concerns customer feedback. In addition, these guests are the most perceiving emotional value, social value, quality value, and price value (Cheung, 2012; Creusen, 2010; Raza *et al.*, 2012). Guests who obtained higher education preferred the hotel which provides homey and unique interior design. Also, these guests tend to go to the hotel that is providing organic food. In addition, these guests have preferred an online reservation system for room booking in hotels. These guests have chosen the hotel which offers high-speed internet access (Abdul Aziz *et al.*, 2012; Lee & Tussyadiah, 2010; Victorino *et al.*, 2005; Wang, 2013).

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تقييم الأنشطة الابتكارية في الفنادق باستخدام تحليل الأهمية والأداء

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على الرغم من أهمية كل من ابتكار الخدمات الفندقية، والقيمة المتصورة للضيف ونبية العودة في صناعة الفنادق، إلا أن الأدبيات قد كشفت عن وجود فجوة في الدراسات المتعلقة بتأثير ابتكار الخدمات الفندقية على القيمة المدركة للضيف ونبية العودة في الفنادق. لذلك تهدف الدراسة الحالية إلي تحديد هذه الفجوة تقديم بعض المقترحات لتقليصها. تم إستطلاع رأى عينة من الضيوف الذين اقاموا في الفنادق عن طريق تصميم وتوزيع إستمارة إستقصاء تحتوي على 79 سؤال يتعلق بأنواع الفنادق المبتكرة ، وتخصيص الخدمة ، واستخدام تكنولوجيا المعلومات ، وابتكار العمليات ، والابتكار الذي يركز على التسويق ، وتمييز العلامة التجارية ، وابتكار التسعير ، والقيمة المتصورة للضيف ونبية العودة حيث تم توزيع 280 استمارة استقصاء على الفنادق وتم تحليل عدد 220 إستمارة إستقصاء بإستخدام أسلوب تحليل التباين (Variance Analysis) للتعرف على الإختلافات بين الجنس والعمر ومستوي التعليم. كذلك تم إستخدام أسلوب (Importance-performance analysis) لتحليل الأهمية والأداء والذي أظهر وجود توافق بين الضيوف أن الضيوف وافقوا على أن الفنادق بحاجة إلى إعداد أفضل في نقاط "الفندق يوفر سعراً خاصاً" و "يوفر الفندق الطعام العضوي". وايضا أوضحت النتائج أن الفنادق أكثر أهمية بالنسبة لغالبية ابتكار خدمات الفنادق والقيمة المتصورة من الضيوف. هذه الدراسة لها آثار مفيدة لصناعة الضيافة.

الكلمات الدالة: الأنشطة الابتكارية، تحليل الأهمية والأداء، الفنادق، مصر.