International Journal of Hospitality & Tourism Administration

Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/wjht20

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Published online: 14 May 2014.

To cite this article: Rosanna Leung, Basak Denizci Guillet & Rob Law (2014) The Channel That Offers the Lowest Online Room Rates: A Case Study of Hotels in Hong Kong, International Journal of Hospitality & Tourism Administration, 15:2, 103-120, DOI: 10.1080/15256480.2014.901050

To link to this article: http://dx.doi.org/10.1080/15256480.2014.901050

International Journal of Hospitality & Tourism Administration, 15:103–120, 2014

ISSN: 1525-6480 print/1525-6499 online
DOI: 10.1080/15256480.2014.901050

Routledge
Taylor & Francis Group

The Channel That Offers the Lowest Online Room Rates: A Case Study of Hotels in Hong Kong

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Online distribution channels increasingly serve as platforms hotels can use to offer competitive room rates to attract price-sensitive customers and maximize yield. Capturing the lowest and highest daily room rates over a 360-day period from five of the most popular online travel agencies, and two batches of data showing the lowest room rates over 28 days from a last-minute bookings website, this study compares the lowest prices offered. The results indicate that no single online channel outperforms the others in any of the hotel star-rating categories, and that the last-minute reservation service provides the lowest hotel room rate across different star ratings.

KEYWORDS lowest room rate, online distribution channels, Hong Kong hotels, last-minute booking, star rating

INTRODUCTION

Prior to the e-business era, hotel managers seeking to maximize their yield had to rely on business partners such as global distribution systems (GDS) and travel agents to promote their products and services. The realization of results, which largely depended on the performance of these business

Received April 6, 2011; accepted August 30, 2012.
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partners, often took some time to come through. In addition, customers had to spend a tremendous amount of time and effort searching for the best available room rates, especially in the case of overseas hotels and tour packages; booking also incurred high telecommunication costs. In addition, geographic distance, time differences, and language barriers made it hard for customers to locate the information they desired. Finally, hotels could not maximize occupancy by providing last-minute special offers.

With the dramatic increase in the number of Internet users and the popularity of e-commerce, more travelers now use online travel agencies (OTAs) to search for and purchase travel products. It is widely known that online distribution channels are a cost-effective way of promoting and attracting business, presenting neither effort nor geographical barriers. As users can easily locate and compare product prices, OTAs have become one of the major information sources for travelers. In order to remain competitive in the e-commerce environment, therefore, hotel marketing staff should set up their online marketing strategies with care.

In Hong Kong, a popular travel destination in Asia, the total number of hotel guest rooms increased by almost 28% between 2006 and 2010, from 47,128 to 60,102 (HKTB, 2010). The endorsement or approval of 52 new hotel projects over the next few years means that the number of hotels in Hong Kong will reach 227 by 2016, with a total of 70,223 guest rooms (HKTB, 2010). With such an increase, competition has become fiercer, and filling empty rooms has become the primary goal of hotel sales teams. Furthermore, the external environment also affects marketing strategies. When the international financial crisis occurred in 2008, the hotel industry was not seriously affected at first, as most people had already made their travel plans. However, as an increasing number of companies became negatively affected, subsequent plans, especially those of American business travelers, were suspended or cancelled. Figure 1 shows that the overall occupancy rate dropped from 85% in 2008 to 78% in 2009, with a record low of 55% in June 2009 (HKTB, 2009). In addition, the average room rate was reduced by 17% to HK$1,023 (US$131) in 2009 compared to HK$1,222 (US$157) in 2008. The situation was the worst in July and August 2009, when the average room rate dropped by 20% to HK$881 (US$113; HKTB, 2009b).

To overcome the negative effects of various factors in the external environment and maximize yield, fluctuations in occupancy rates underscore the importance of having a pricing strategy. Previous research indicates that price is consistently one of the primary determinants of consumer purchase decisions (KPMG, 2005; Law & Hsu, 2006; Rheem, 2009). As many OTA websites sort search results by price, a good pricing strategy can not only maximize a hotel's profit but also increase its ranking (Shaw & Adams, 2002). As intermediaries between customers and hotels, online distribution channels have become increasingly important due to the efficient transfer of information they offer (O'Connor & Frew, 2002). Hence, many hotels use them to

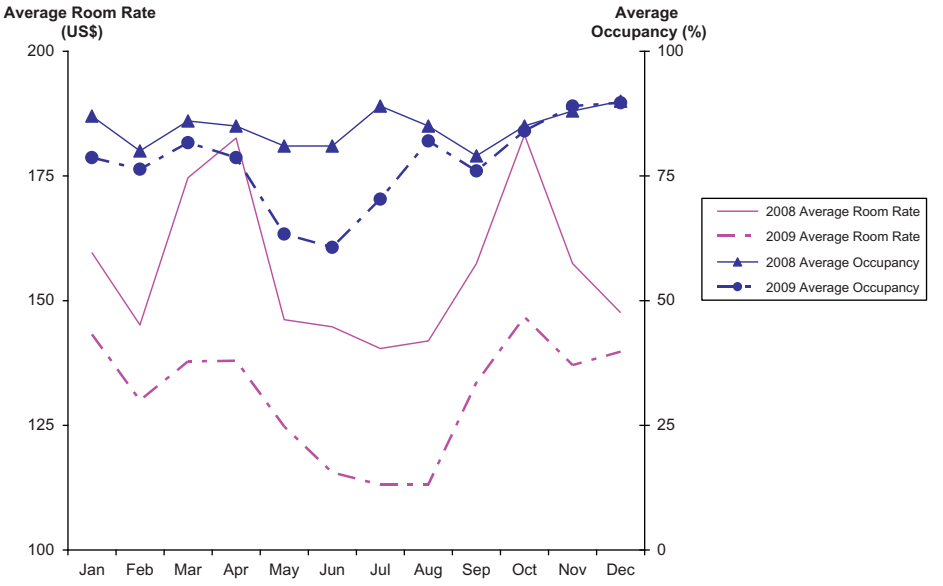

FIGURE 1 Hong Kong Hotel Average Room Rate and Occupancy in 2008 and 2009 (color figure available online).

Source: HKTB (2009).

advertise attractive room rates. To uncover the pricing strategies of such channels, the aims of this study were:

1. To examine which of the top OTAs offer the lowest room rate for hotels in Hong Kong;
2. To determine whether last-minute agencies (LMAs) offer room rates lower than those of OTAs for hotels in Hong Kong; and
3. To investigate the online pricing strategies of Hong Kong hotels.

LITERATURE REVIEW

Growing Importance of Online Distribution Channels

The wide adoption of the Internet and e-commerce has lowered entry barriers and switching costs for customers, which in turn has increased price transparency and competition (E. Kim, Nam, & Stimpert, 2004). The number of online travel customers has risen dramatically as a consequence. According to the Travel Industry Association of America (2006), the proportion of Americans buying travel products online increased from 31% in 2004 to 43% in 2005, and then to 64% by the end of 2007 (Horrigan, 2008). It is clear that online travel services have considerable potential to increase business volume. By the end of 2010, direct online channel sales accounted

for 62% of hotel bookings made online, while the dependence of the top 30 major hotel brands on OTAs for bookings increased from 25.4% in 2008 to 30% in 2009 (Starkov & Mechoso, 2010). Even before the Internet became a major source of tourism product and price information, 60% of leisure travelers stated they were actively searching for the "lowest possible price" (Yesawich, Pepperdine, & Brown, 2000). With the increasing popularity of the Internet, comparing travel product prices has never been easier. The hotel industry habitually relies on OTAs to promote and sell their rooms because they offer efficiency in information transfer and the capacity to act as intermediaries between customers and hotels (O'Connor & Frew, 2002; Toh, Raven, & DeKay, 2011). Since the financial crisis of 2008, they constitute the only distribution channel to have experienced growth, at a rate of 6.6% in 2009 (Starkov & Mechoso, 2010). The strategies implemented by such channels directly influence the business performance of hotels, and with the increase in the level of competition, online pricing strategies are more important than ever before. However, very few studies have focused on this topic. Looking at the increasingly fierce competition among OTAs, Buhalis (1998) suggested that two distinct strategies will dominate travel services in future: they will either offer personalized and customized products and services to encourage customers to pay more, or compete with each other on price.

The main objective of yield management is to maximize revenues or profits from the sale of perishable assets, such as hotel rooms, by controlling price and inventory and improving service (Lieberman, 1993). With the increase in the number of studies that suggest travelers book or purchase travel products from 2 weeks to 3 hours in advance to get the last-minute special discounts (AirlineTickets.org, 2010; Maclsaac 2007; O'Neill, 2005), hotels can take this opportunity to maximize their yield rather than remaining empty. As the timeframe for booking completion via online channels becomes shorter, the number of last-minute bookings could increase. As a result, hotels can take this opportunity to maximize their yield by attracting price-sensitive customers rather than remaining empty. LMAs provide a platform for hoteliers to promote special room rates to such customers. Law, Chan, and Goh (2007) examined seven direct and indirect online distribution channels and showed that of the four overseas channels, the LMAs offered relatively lower room rates. They also found that online customers are price sensitive, and argued that it may be useful for both consumers and practitioners to investigate the pricing strategies of OTAs and LMAs over time (Law et al., 2007). O'Connor (2002) found that multiple rates are offered simultaneously across different channels, so customers need to take time to search for the best rates. Although hotel managers may not like customers booking rooms solely on price, many people do choose to use this as a sorting criterion when viewing hotel rooms on OTA websites. This means that hotels must offer better rates to OTAs to achieve better online rankings (Shaw & Adams, 2002).

Searching for the Best Room Rates

The Internet allows travel agents and GDS to offer last-minute deals on hotel rooms, and helps customers to locate the latest promotions immediately. The convenience of browsing for information on the Internet has lowered search costs. With the assistance of search engines, a list of OTA websites can be easily generated, and the cost of retrieving and comparing price information is nearly zero. Price variations among online channels have shaped the perceptions of consumers, who now perform searches via multiple online engines and shop around for better deals (Enz, 2003; Murphy, Schegg, & Qiu, 2006; O'Connor & Frew, 2002; O'Connor & Piccoli, 2003; Varini, Engelmann, Claessen, & Schleusener, 2003). Previous research indicates that the most important consideration in making online purchases is price (Law & Hsu, 2006; Rheem, 2009), and that as the cost of an information search decreases, customer price sensitivity increases (Alba et al., 1997). Customers search and compare various websites to ensure that they pay the lowest price (Chen & Schwartz, 2008; W. G. Kim, Ma, & Kim, 2006; Suri, Long, & Monroe, 2003), and they are unwilling to pay more if the product or service level is the same (Dean, Morgan, & Tan, 2002). As OTAs typically offer the same types of hotel rooms with the same facilities, it is likely that customers will switch without hesitation to the OTA that provides the lowest room rate. Because customers can locate information much more easily than before, competition among both hotels and OTAs has become more intense (Buhalis & Law, 2008). In such a business environment, both OTAs and hotels must offer the most competitive, best available room rates to customers (Law et al., 2007).

METHODOLOGY

The data in this study were collected in 2009 from six online travel sites: CheapTickets, Expedia, Orbitz, Travelocity, Zuji, and RatesToGo. These are among the world's leading OTAs (O'Connor & Piccoli, 2003; Shaw & Adams, 2002; Tso & Law, 2005). CheapTickets mainly uses the Apollo reservation system provided by Galileo, which is one of the main GDS. Expedia is Microsoft's online travel agency. It connected with Worldspan and Pegasus for hotel room rates, and also has its own system for special contract rate. Orbitz was formed and is owned by five airlines, and has a direct interface with Pegasus. Travelocity is supported by Sabre, and offers a wide range of services such as travel reservations, destination information, and virtual tours. Zuji is the first online travel agency dedicated to the Asia-Pacific region, and is a joint venture between Travelocity and 11 of the leading Asia-Pacific-based airlines. RatesToGo is a last-minute online hotel reservation provider that offers discounted hotel rates for the forthcoming 28 days. For ease of reference, the first five channels are referred to as OTAs and RatesToGo as a LMA. All prices listed in these OTAs and LMA are controlled by hotels via

GDS except Expedia. Expedia could name their price if it is under contract or bulk rate.

The room rate information was crawled and parsed into a database using a computer program developed by a technical assistant hired specifically for the project. In total, three batches of data were collected—the first was intended to examine the lowest rate offered by each OTA, and the others to compare the lowest rates offered by the OTAs against the LMA.

The first batch of data was collected on March 31, 2009. The room rates for a one-night stay in a selection of three-, four-, and five-star hotels in Hong Kong were collected from each OTA for the period from April 1, 2009 to February 21, 2010. To increase the efficiency of the data collection, a Ruby script was used to gather the data automatically. This program looks up price information and captures the first pages that result from the search. These results were then parsed into a database and the data showing the hotels with the lowest rates for each day in each star category were extracted for further analysis.

The room rates collected through CheapTickets, Expedia, Orbitz, and Travelocity were in U.S. dollars. As Zuji and RatesToGo quote room rates in HK dollars, an exchange rate of US$1 to HK$7.8 was applied to allow direct price comparison. In addition, Zuji and RatesToGo include service charges and taxes in their rates while the other OTAs do not. Hence, adjustments were made to ensure that all room rates included these extras. The period of data collection was restricted by the number of days available on the OTA websites. With the exception of RatesToGo, these OTAs allow bookings for up to 300 days ahead.

RatesToGo is a last-minute hotel booking service that offers reservations a maximum of 28 days in advance. Because this study aimed to compare the lowest room rate performance of LMAs and OTAs, Expedia and Zuji were selected for comparison with RatesToGo, as the former is the largest regional OTA in Southeast Asia and the latter one of the largest OTAs in the world. CheapTickets and Orbitz were excluded from the comparison because they are both affiliated with RatesToGo, as was Travelocity because it is Zuji's parent company. To provide better data analysis, two rounds of data collection were carried out to enable comparison of the OTAs and LMA. The first batch was collected on March 31, 2009, for the period from that date to April 28, 2009, and the second on October 24, 2009, for the period from that date to November 20, 2009. According to historical patterns of hotel occupancy rates, these two periods correspond to the low season in the Hong Kong hotel industry, when occupancy and room rates are lower than at other times (HKTB, 2009). To fill their rooms, hotel managers normally reduce rates to attract price-sensitive customers. Also, as a single round of data collection cannot fully reflect the state of the hotel business after a financial crisis, it was necessary to collect another batch of data six months after the first one,

to examine how the financial tsunami had affected hotel room revenue and the performance of OTAs and LMAs during the low season.

Each of the selected OTAs has its own method of identifying a hotel's star rating. RatesToGo uses those given by the government tourism authority (RatesToGo, 2010); whereas Travelocity's are based on the most up-to-date research conducted by their hotel team, with additional reference to industry standards (Travelocity, 2010). Ratings are also affected by customer feedback and the quality of amenities and staff. Zuji uses the standard ratings from Travelocity's website, as it is a joint venture. Expedia assigns its own star ratings (Expedia, 2010), and acknowledges that its system may not correspond with others. CheapTickets' ratings and the explanations for them are presented on their website, but the evaluation standards they used are not specified (CheapTickets, 2010). Finally, Orbitz's ratings are based on industry ratings such as the AAA system, evaluations by the company's hotel team, and customer feedback (Orbitz, 2010). Generally speaking, the three-star category represents budget hotels whereas four- and five-star ratings represent mid-range and luxury hotels, respectively. Though each OTA adopted different rating methodology, prior research indicated the rating for each hotel shows no statistical differences (Denizci Guillet & Law, 2010).

DATA ANALYSIS

Lowest Room Rate Offered by OTAs in Each Hotel Star-Rating Category

The data analysis comprises two parts. The first presents the lowest average rate, calculated as the mean value of the lowest room rates collected from each OTA. In the second, the lowest room rates for the various star-rating categories of the OTAs are compared. Three analysis of variance (ANOVA) tests for the three-, four-, and five-star categories were conducted to examine the lowest rates offered by the selected five OTAs. Table 1 presents the results for each OTA in each star-rating category. For three-star hotels, CheapTickets provided the lowest average room rate at $60; Orbitz and Expedia ranked equal second, with $65 and $67, respectively; whereas Travelocity ($77) and Zuji ($80) offered the highest. Although CheapTickets offered the lowest average rate, Zuji provided the lowest daily rate, $39, which is slightly less than that of CheapTickets ($41). Travelocity's lowest rate was $53, which is almost 23% higher than Zuji's.

Interestingly, although Zuji offered the lowest daily rate and CheapTickets the lowest average rate for three-star hotels, this ranking is reversed in the case of four-star hotels. Zuji's average rate for this category was $74, lower than its average three-star room rate. At $79, Expedia's rate was slightly higher. Travelocity and Orbitz offered similar rates of $84 to $86. CheapTickets, which offered the best average room rate for three-star hotels,

TABLE 1 Results of ANOVA Tests of the Lowest Room Rates Among Five OTAs

Star/OTA		Days	Mean (US$)	Std.	Lower bound	Median	Upper bound	*df*	*F*	Sig.
3	CheapTickets	315	60.39*	14.03	41	56	111	4	65.080	.000
	Expedia	329	66.72**	18.93	48	63	110			
	Orbitz	328	65.44*,**	13.94	45	62	111			
	Travelocity	330	77.25**	18.02	53	74	161			
	Zuji	337	79.97**	25.43	39	69	120			
	Total	1639	70.09	20.03	39	64	161			
4	CheapTickets	315	91.94	20.95	63	98	213	4	37.320	.000
	Expedia	329	78.51†	24.55	52	77	174			
	Orbitz	328	85.79***	12.79	66	92	114			
	Travelocity†††	330	83.66***, †	18.49	51	75	129			
	Zuji	256	74.07†	16.53	55	68	107			
	Total	1558	83.12	20.05	51	77	213			
5	CheapTickets	315	180.70††	37.61	127	168	259	4	364.07	.000
	Expedia	329	175.76††	61.73	52	176	342			
	Orbitz	328	158.14	32.53	111	171	220			
	Travelocity†††	330	81.78	15.57	51	79	166			
	Zuji	337	129.20	30.76	94	110	197			
	Total	1639	144.69	53.05	51	142	342			

*$p = .005$ is significant at the .05 level; all other mean differences are significant at $p = .000$. **$p = .902$, .324 is not significant at the .05 level. ***$p = .614$ is not significant at the .05 level. †$p = .005$, .044 are significant at the .05 level; all other mean differences are significant at $p = .000$. ††$p = .483$ is not significant at the .05 level; all other mean differences are significant at $p = .000$. †††The 4-star and 5-star hotel room rates published by Travelocity show no significant difference at $p = .346$.

provided the highest for four-star hotels at $92. Travelocity and Expedia had the lowest daily rates, at $51 and $52, respectively, slightly lower than Zuji's lowest daily rate of $55.

The ANOVA test results for the five-star hotel room rates show that Travelocity outperformed the other OTAs, offering a lowest average rate of $82. This rate is 36% lower than the $129 offered by Zuji, which ranked second lowest. Orbitz ranked third with an average rate of $158, and Expedia and CheapTickets next with similar average rates of $176 and $181. Travelocity offered not only the lowest average ($82) but also the lowest daily room rate, $51, which was the same as that for four-star hotels.

Comparing the Lowest and Highest Rates Offered by OTAs

As the data covered both high and low seasons, the lowest (highest) rate should represent the least (most) expensive rate offered during the low (high) season. The results of the comparison are presented in Figure 2. These show that the three-star hotel room rates offered by Zuji were the best across the entire study period, with lowest and highest rates of $39 and $265 (the corresponding average rates being $79 and $163). Zuji also provided the

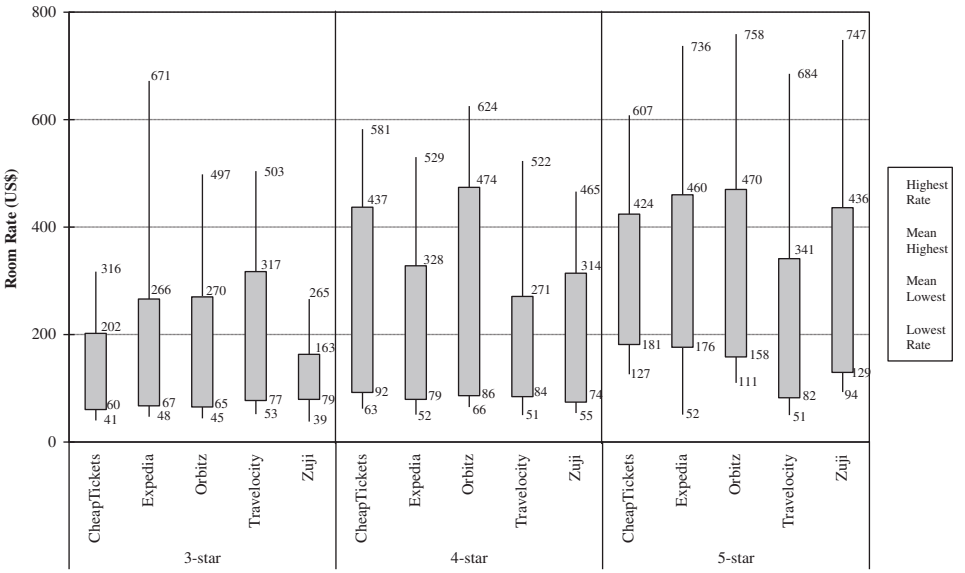

FIGURE 2 Rate range offered by the OTAs for different star-rating categories.

narrowest price range of all the OTA websites, with only an $84 difference between the lowest and highest averages. However, the lowest such price offered by Zuji was also the highest of all the five OTAs. CheapTickets offered the best lowest average rate at only $60, some 24% cheaper than that offered by Zuji.

For four-star hotels, Zuji offered the lowest average rate at $74, which is 20% lower than the rate offered by CheapTickets. Travelocity provided the best room rate for five-star hotel rooms, with a lowest average rate of $82; this is even lower than the four-star average rates offered by Travelocity ($84), Orbitz ($86), and CheapTickets ($92). CheapTickets' highest rate ($607) was lower than Orbitz's ($624) for four-star rooms. No statistically significant difference was found between the lowest room rates offered by Expedia and Travelocity during the low season for three-, four-, or five-star hotels.

Price Performance Among the LMA and OTAs

In addition to examining OTA rate performance, this study also compared the performance of the LMA with that of the OTAs. The two batches of data collected were used to examine the yield management and rate strategies adopted by hotels when demand is low. Table 2 shows the result of the analysis and a comparison of the first and second batches of data.

In the first batch of data, RatesToGo's average room rates for all star ratings were lower than those of Zuji (a regional travel agent concentrating on Southeast Asia) and Expedia (an international travel agent). The average

TABLE 2 Lowest Room Rates Offered by the LMA and the Ordinary OTAs

	1st batch (March–April 2009)			2nd batch (October–November 2009)			
	Lowest/*M*	Std.		Lowest/*M*	Std.	*t*-value	
3-star							
RatesToGo	41/47	4.345	$df = 2$; $F = 36.212$**	29/29	0.000	21.568*	$df = 2$; $F = 37.136$**
Zuji	53/62[1]	7.797	[1]$p = .404$ is not significant at	29/41	17.335	6.011*	All mean differences between
Expedia	54/60[1]	8.524	the 0.05 level; all other mean differences between groups are significant at $p = .000$.	45/54	7.234	2.758*	groups are significant at $p = .000$.
4-star							
RatesToGo	42/56[a,b]	11.240	$df = 2$; $F = 10.260$**	51/57[1,2]	2.347	−0.614	$df = 2$; $F = 1.178$
Zuji	56/73[1,b]	10.962	[1]$p = .999$ is not significant at	54/58[2,3]	6.914	5.884*	[1,2,3]$p = .295, .890, .543$ are not
Expedia	57/73[1,a]	22.380	the 0.05 level; [a]$p = .001$ is significant at the 0.05 level; all other mean differences between groups are significant at $p = .000$.	45/60[1,3]	9.241	2.732*	significant at the 0.05 level; all other mean differences between groups are significant at $p = .000$.
5-star							
RatesToGo	91/104 [1]	11.487	$df = 2$; $F = 250.365$**	50/76	17.473	7.257*	$df = 2$; $F = 249.388$**
Zuji	95/112 [1]	13.700	[1]$p = .174$ is not significant at	95/110	11.903	0.683	All mean differences between
Expedia	156/190	20.263	the 0.05 level; all other mean differences between groups are significant at $p = .000$.	139/161	12.989	6.451*	groups are significant at $p = .000$.

*Significant at $p < .05$. **Significant at $p = .00$.

room rates offered by RatesToGo for three- and four-star hotels were $47 and $56, respectively. These are at least 20% lower than the average rate provided by Expedia, the first runner up, for three-star hotels ($60), and for four-star hotels ($73) offered by both Zuji and Expedia. For five-star hotels, RatesToGo's rate was 7% less expensive than Zuji's, although there is no statistically significant difference between the two; Expedia's rate was 45% higher than that of RatesToGo.

The financial situation of Hong Kong's hotel industry changed drastically in 2008–2009. The average occupancy rate dropped from 85% in April 2008 to 79% in April 2009, and from 81% in June 2008 to 61% in June 2009 (HKTB, 2009). Although rates in October and November 2009 remained the same as they had over the corresponding period in 2008, the average room rates across these months dropped by 20% and 13%, respectively (Figure 1). It would appear that to maximize yields, hotels lowered their revenue per available room (REVPAR) to attract price-sensitive customers.

Most of the room rates in the second batch of data were significantly lower than those in the first. For three-star hotels, RatesToGo consistently offered $29 per room per night over the period, and Zuji offered the same price on certain days. For four-star hotels, although Expedia had the highest average room rate ($51), it offered the best daily rate ($45), which was 13% less expensive than the best offered by RatesToGo. Interestingly, the room rates offered by all three of these service providers for four-star hotels were around $57 to $60 per night, and these differences are not statistically significant. RatesToGo also outperformed the other two OTAs on price for five-star hotels, with an average room rate of only $75, which is 31% and 53% less expensive than the rates of Zuji and Expedia.

A comparison of the data in the first and second batches shows that the average room rate for three-star hotels offered by RatesToGo dropped by more than 38%, with corresponding percentages for Zuji and Expedia of 35% and 6%, respectively. RatesToGo's four-star average room rate in both the first and second batches was around $56 to $57, but Zuji and Expedia's dropped by 20% and 17%, respectively. For five-star hotels, RatesToGo's average room rate dropped by 27% and that of Expedia by 16%. There was no statistical significance between the two batches for Zuji's rates.

OTA Lowest Rate Options

The number of hotels with low rates on the OTA websites varied. Table 3 shows that for three- and four-star hotels, Travelocity provided significantly more options than the other four services. On average, it presented 1.4 to 1.6 hotels per day offering the lowest rate, whereas the remaining OTAs provided only 1.04 to 1.11 hotels in the three-star and 1 to 1.15 hotels in the four-star categories. For five-star hotels, Expedia provided more options,

TABLE 3 Number of Lowest Room Rates Options Provided by Online Travel Agencies

Star rating/OTA	Days	Avg. no. of lowest rate option per day	Std.	*df*	*F*	Sig.	No. of hotel choices	Hotels provide lowest rate to this OTA (%)	Hotels provide lowest rate solely to this OTA	
3 CheapTickets	315	$1.05^{1,2}$	0.21	4	49.47	0.00	55	8 (15)	1	$^{1,2,3}p = .274, .999, .158$ is not significant at the 0.05 level. $^{a}p = .001$ is significant at the 0.05 level; all other mean differences are significant at $p = .000$.
Expedia	329	$1.11^{1,3,a}$	0.37				52	9 (17)	4	
Orbitz	328	$1.04^{2,3}$	0.25				55	6 (11)	0	
Travelocity	330	1.41	0.60				39	18 (46)	10	
Zuji	337	1.23^{a}	0.42				25	10 (40)	1	
4 CheapTickets	315	$1.13^{1,2,a}$	0.33	4	102.69	0.00	45	12 (27)	5	$^{1,2}p = .965$ and .053 are not significant at the 0.05 level. $^{a,b}p = .003$ and .006 are significant at the 0.05 level; all other mean differences are significant at $p = .000$.
Expedia	329	$1.15^{1,b}$	0.52				54	11 (20)	5	
Orbitz	328	$1.04^{2,b}$	0.19				45	6 (13)	0	
Travelocity	330	1.60	0.66				54	16 (30)	6	
Zuji	256	1.00^{a}	0.00				49	8 (16)	2	
5 CheapTickets	315	$1.04^{1,2,3}$	0.34	4	40.96	0.00	30	6 (20)	1	$^{1,2,3,4}p = .590, .254, .583$, and 1.000 are not significant at the 0.05 level. $^{a}p = .004$ is significant at the 0.05 level; all other mean differences are significant at $p = .000$.
Expedia	329	1.28	0.54				17	8 (47)	5	
Orbitz	328	$1.00^{1,4,a}$	0.00				31	7 (23)	2	
Travelocity	330	$1.09^{2,a}$	0.39				33	13 (39)	4	
Zuji	337	$1.00^{3,4,a}$	0.00				29	4 (14)	0	

Note. OTA = online travel agency.

with a daily average of 1.28 hotels, which is significantly different from that of the other four websites (range from 1 to 1.09 hotels).

Although most OTAs provided a large number of hotels for customers to choose from, not many establishments offered the lowest room rates that would attract them. For three- and four-star hotels, no more than 20% of the hotels offered their lowest rates to CheapTickets, Expedia, and Orbitz. Using Orbitz as an example, out of 55 hotels, only 6 (11%) offered the lowest rates for the upcoming 328 days. The greatest number of lowest-rate choices was found on Travelocity, with around 46% and 30% of hotels providing their lowest rates over the study period. As a result, price-sensitive customers had more choices when booking through Travelocity.

Lastly, this study attempted to examine the online pricing strategies of Hong Kong hotels. The results indicate that the majority provided low room rates through multiple channels. However, several hotels offered their exclusive rates solely to one website. Travelocity was the most popular channel, receiving exclusive rates from 10, 6, and 4 hotels in each of the three-, four-, and five-star categories. Travelocity also received many exclusive rates, but only two five-star hotels and none in the other two categories offered exclusive rates to Orbitz.

On average, each three-star hotel offered its lowest rates to 1.83 OTAs. The corresponding numbers for four- and five-star hotels were 1.57 and 1.68. Only one hotel offered its lowest rate to all five OTAs, and four provided their lowest rate to four OTAs. Apparently, the majority of the hotels accustomed to provide their lowest prices through limited number of online channels.

CONCLUSIONS AND IMPLICATIONS

This study has some interesting and potentially useful findings. First, none of the selected OTAs offered the best prices across all star ratings. Thus, customers should visit several websites to locate the best available rates for a particular category. It may be assumed that in today's business environment, all OTAs offer similar rates given that rate information can be transmitted across the Internet in real time. However, these findings indicate that this is not the case. For instance within the study period, CheapTickets provided the best lowest average rate for three-star ($60), Zuji for four-star ($74), and Travelocity for five-star hotels ($82). However, these websites did not offer the lowest *daily* room rates. Within the study period, Zuji offered the lowest such rate, at $39, for three-star hotels, and Travelocity was cheapest for both four-star and five-star hotels at $51.

Second, the LMA investigated in this study outperformed all the OTAs in offering the lowest hotel rates. It provided hotel reservations for only 28 days in advance, but offered the best average rate across both batches of data for all star categories, especially three- and five-star hotels. It seems that

price-sensitive customers who are willing to book 28 days or less in advance can obtain the best hotel rates through an LMA. Furthermore, the LMA offered not only the lowest daily but also the lowest average room rates.

Third, an examination of each OTA's price range for each star rating over the study period indicates that large differences may exist in year-round room rates. Although Zuji's rate for three-star hotels had the narrowest range, the highest was still seven times higher than the lowest.

Fourth, various studies show that customers perceive star rating to be one of the most informative factors in assessing the pricing of a hotel room (Danziger, Israeli, & Bekerman, 2004; Israeli, 2002). Customers on a limited budget may extract all of the three-star hotel room rates from a website and select from them. However, this study found a large number of hotels whose average prices were higher than those of better-rated establishments. For example, on Travelocity, the average rate for four-star hotels ($84) was slightly higher than that for five-star ($82), and the lowest daily rate for four- and five-star hotels was the same ($51). In addition, on Zuji, the average rate for three-star ($79) was higher than that for four-star hotels ($74). Finally, eight hotels had different star ratings among the different OTAs. Taken together, these results indicate that using star rating as a price indicator may not be a particularly effective strategy.

The findings also offer useful insights for hotel managers. Findings have indicated many hotels offered their lowest room rate to limited number of OTAs. In order to attract more customers, hotel should to offer their lowest room rate to wider range of OTA so as to enlarge the customer base. With the help of OTAs and LMAs, hotel managers can easily promote their adjusted room rates to attract price-sensitive customers and maximize their yield.

As previously discussed, these findings also show that the rates for some three-star hotels in Hong Kong are higher than those for four-star hotels. This type of pricing does not seem logical, since star ratings and rates are usually associated. Given the growing number of OTAs used by hotels, it can be challenging for hotels to manage, monitor, and update their prices across all distribution channels. Indeed, there may be as many as 450 distribution channels for them to choose from (EZYield, 2010). It is thus in the best interests of hotels to use an automated channel management program to track their own prices and those of their competitors on an ongoing basis. Two such programs that are already widely used by hotels include TravelCLICK and EZYield.

The findings suggest two approaches that managers might take. Those working in three-star hotels who aim to stand out among the search results should pick CheapTickets, Expedia, and Orbitz. For managers of four- and five-star establishments, Zuji and Orbitz may be the best choice, because they offer almost the same lowest daily rate. Those hotels that are highly competitive may prefer to differentiate their businesses by offering the same, low room rates as those of other hotels but providing higher-level services

and/or facilities. As a result, price-sensitive customers will feel that they are paying the same low price but receiving superior services, which could help increase customer satisfaction and transaction completion rates.

LIMITATIONS AND FUTURE RESEARCH

This study had a number of limitations. First, the room rate data collected for the OTA and LMA websites were collected over a few days only, and thus may not represent a general trend in room rate changes. Second, room type was not included as a parameter in the data collection, so the highest rate recorded for the three-star hotels may have been for an executive suite and the lowest for five-star hotels for a standard room. However, as different hotels label their guest rooms differently, it is very difficult to extract this information.

Another limitation is that each of the selected OTAs uses its own method of identifying a hotel's star rating. These various definitions clearly indicate that the definitions used by each OTA are slightly different. The test results presented in Table 1 show that Travelocity's average rate for four-star hotels was higher than that for five-star hotels. Hence, comparing the average room rates of hotels with different star ratings may not reflect the actual performance of OTA websites.

The data collected in this study covered only hotels in Hong Kong, which is a major tourist and business destination in Asia and home to many national and international hotel brands. However, this means the findings of this study can only be applied to three-, four-, and five-star hotels in a single city. Empirical replication studies in other locations and for other star-rating categories may provide more insight into this discussion.

Finally, although Tso and Law (2005) show that a local travel agent in Hong Kong offered the lowest room rate among the seven channels that they examined, the websites of such service providers were not included in this study because their booking engines are generally very different in design from those of the OTAs under study, so the software designed for this research was unable to capture their data.

These limitations notwithstanding, this study represents one of the most comprehensive hotel rate analyses available in terms of the number of data points collected and the length of the data collection period. Pricing in the hotel industry is a relatively new research area. Hence, there is much room for improvement and follow-up research. This study could be extended in several ways. One possible avenue would be to examine the "name your price" approach on opaque distribution channels such as Priceline and Hotwire. Opaque channels are particularly interesting, because this approach hides the room type and hotel name from the customer until the reservation and purchase process is complete. For example, a customer may be

looking for a four-star hotel in Hong Kong or simply one that is charging less than $150 per night. These channels represent a way for hotels to offer discounts while hiding the exact amount and nature of that discount from the customer. The challenge in using these channels for data collection is that it would require the cooperation of Priceline or Hotwire to retrieve the rates. Pricing on auction sites such as Luxury Link or Family Getaway is another possible research direction, as a recent trend among luxury hotels is to offer travel packages through auctions on these websites to attract leisure customers who are willing to pay more.

ACKNOWLEDGEMENTS

The authors wish to thank the anonymous reviewers for their comments and Mr. Cowoo Chen for his assistance with data collection.

FUNDING

This project was supported by a research grant from Hong Kong Polytechnic University.

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