

Segmenting Spa Customers Based on Rate Fences

Using Conjoint and Cluster Analysis

Yuanyuan Guo

PhD Candidate

School of Management, Harbin Institute of Technology,

92 West Dazhi Street, Harbin, Heilongjiang, China

Tel: + 86 151 1459 7043

Fax: +86 0451 86414024

E-mail: kelly.yuanyuanguo@gmail.com

Basak Denizci Guillet

Associate Professor, PhD

School of Hotel and Tourism Management, The Hong Kong Polytechnic University,

17 Science Museum Road, TST East, Kowloon, Hong Kong SAR, China

Tel: + 852 3400 2173

Fax: + 852 2362 9362

E-mail: basak.denizci@polyu.edu.hk

Deniz Kucukusta

Assistant Professor, PhD

School of Hotel and Tourism Management, The Hong Kong Polytechnic University,

17 Science Museum Road, TST East, Kowloon, Hong Kong SAR, China

Tel: +852 3400 2296

Fax: + 852 2362 9362

E-mail: deniz.kucukusta@polyu.edu.hk

Rob Law

Professor, PhD

School of Hotel and Tourism Management, The Hong Kong Polytechnic University,

17 Science Museum Road, TST East, Kowloon, Hong Kong SAR, China

Tel: + 852 3400 2181

Fax: + 852 2362 9362

E-mail: rob.law@polyu.edu.hk

Corresponding Author: Basak Denizci Guillet

Acknowledgement:

This project was supported by a grant funded by the Research Grants Council of the Hong Kong Special Administrative Region, China (Project Number: PolyU 5423/12H)

Segmenting Spa Customers Based on Rate Fences Using Conjoint and Cluster Analysis

Abstract

The purpose of this study was to segment spa customers based on their preferences for spa rates and restrictions. A survey was conducted using a self-administrated questionnaire distributed to Chinese visitors in Hong Kong with spa experience. Four distinct customer segments were identified by combining conjoint and cluster analysis: treatment-oriented spa goers, guarantee-sensitive spa goers, price-sensitive spa goers and fewer days advance booking seekers. The results support the effectiveness of combining conjoint and cluster analysis in market segmentation studies. The findings will be useful for spas in designing rate fences preferred by different types of customers, which could in turn increase spa revenue.

Keywords: spa revenue management; market segmentation; rate fence; rate restriction; conjoint analysis; cluster analysis

Segmenting Spa Customers Based on Rate Fences Using Conjoint and Cluster Analysis

INTRODUCTION

A health and wellness trend has been created by health-conscious travelers seeking to enhance their well-being through their travel experiences. Healthy living has become a lifestyle and hotels have come to realize that customers want to stay healthy as they travel. In addition to standard facilities such as fitness centers, pools and spas, hotels are offering more personalized and holistic services, including in-room wellness programs and special diet menus (e.g., vegan and gluten free). Moreover, spa offerings in hotels have shifted from beautification and pampering to health and wellness based on customers' needs and wants. Therefore, hotels and spas require large investments (Tabacchi, 2010) and a spa should be regarded as a profit-generating center rather than a hotel amenity (Madaoglu & Brezina, 2008).

Despite the influence of the health and wellness trend and the growth of the spa segment in the hotel industry, this area of research has been overlooked. Only a few studies have previously concentrated on spa customers, (e.g., Mak, Wong, & Cheng, 2009; Koh, Yoo, & Boger, 2010; Kim, Kim, Huh, & Knutson, 2010). Limited guidance is available to spa managers with respect to how to meet customers' needs and demands, and maximize spas' revenue. Rate fences are connected to revenue management for the past 23 years after the seminal work of Hank, Cross, and Noland (1992). In the spa industry, recent studies also recommended using rate fences as levers to control rates and arrivals and maximize revenues (e.g., Li, 2013; Cornell University, 2013; Kimes & Singh, 2009). In spite of the prior efforts, these studies did not examine spa customers' preferences regarding the rate fences. Rate fences are also known as rate restrictions, or terms and conditions that are attached to room rates and presented to customers. Rate fences

can be utilized to allow customers to segment themselves into different rate categories based on their needs (Hanks et al., 1992). Economists claim that different customer segments have different needs and price elasticities (Kimes & Wirtz, 2003), thus spa rates and fences should be designed to meet the needs for different market segments. Hence, more research in the context of market segmentation is required to understand different customer segments' reactions to spa rate and restrictions. Using data collected from mainland Chinese travelers in Hong Kong, this study aims to understand Chinese spa customers by segmenting them based on their preferences for spa rate fences.

Chinese travelers to Hong Kong are selected since China is becoming a major source of tourist market around the world, especially in the South East Asia region (Pizam, 2008). Chinese tourists dominate the Hong Kong tourism market and play an important role in shaping the hospitality products offered by hotels. Additionally, previous studies indicated that the perceptions of Chinese tourists differ significantly from those of other markets in terms of price fairness (Bolton, Keh, & Alba, 2010) and their orientation toward in-groups (Oyserman, Coon, & Kimmelmeier, 2002) and collectivism (Hofstede, 1980). Hence, it is crucial to understand their needs and wants that are related to the spa industry and how they are segmented based on different rate fences.

The findings will be of academic value, adding to the very limited knowledge base for the spa industry. Specifically, this study extends the limited literature regarding spa market segmentation (e.g., Koh et al., 2010; Chen et al., 2013; Pesonen et al., 2011) by segmenting spa customers from a rate fences perspective. Additionally, this study extends previous spa revenue management literature by identifying different customer segments' preferences and perceptions regarding rate fences. Recent studies have recommended using rate fences for spa revenue management (e.g., Kimes & Singh, 2009; Li, 2013; Cornell University, 2013), but did not examine customer preferences segmented by such fences. The findings will also be useful in

helping spa professionals to understand the preferences and expectations of each segment of the Chinese market when designing their spa products.

Consequently, the objectives of the study are:

- to segment Chinese customers traveling to Hong Kong based on their preferences for spa rates and restrictions;
- to identify the relative importance of various rate restrictions that different spa segments consider when booking spas in Hong Kong; and
- to determine the spa rate restrictions preferred by different customer segments.

LITERATURE REVIEW

The literature review comprises three sections. The first section introduces revenue management in the spa sector. The second section describes the rate fences used in the hospitality industry and customer perceptions of these rate fences. The third section introduces market segmentation theory and segmentation studies in the spa industry.

Spa Revenue Management

Revenue management is used extensively by airlines, hotels and restaurants. However, little consideration has been given to the possibilities for revenue management in spas. Kimes (2008) suggested that there is a need to extend revenue management to spas. With the characteristics of high fixed capacity, perishable inventory and time-variable demand (Fenard, 2013; Tabacchi, 2010; Cross, 1997; Kimes, 1989), spas are a good candidate for revenue management.

Kimes and Singh (2009) defined spa revenue management as the practice of allocating the right space to the right customer at the right price at the right time to achieve revenue maximization. “Right” can be interpreted as meaning that spas achieve the most possible revenue and at the same time deliver the greatest value or utility to customers (Kimes & Singh, 2009). Just as hotels offer different room rates according to demand, spas can implement similar price

incentives to generate more revenue. For example, they can design prices according to predicted demand levels so that price-sensitive customers who are willing to purchase at off-peak times can do so at a discounted rate, and price-insensitive customers who want to purchase at peak times can do so likewise.

Previous studies have introduced some approaches and strategic levers for spa revenue management (e.g., Cornell University, 2013; Kimes & Singh, 2009; Lyon, 2008; Kimes, 2008). In an effort to maximize revenue, Kimes (2008) suggested that the first step for spas is to identify the demand trend (i.e., busy periods and slow periods), and then to develop pricing and duration control based on demand. Lyon (2008) provided fourteen revenue management improvement alternatives, such as offering “price advantages” on future bookings for off-peak times and selling premium services only at peak spa times. Kimes and Singh (2009) recommended gathering data on arrival patterns, occupancy levels and treatment times to calculate RevPATH (revenue per available treatment-hour) as a measure of revenue management effectiveness. RevPATH, a time-related measure, integrates the price and duration of the treatment as factors in the revenue calculation for the spa industry (Kimes & Singh, 2009). According to Kimes and Singh (2009), “RevPATH can be calculated by multiplying the treatment room occupancy by the average treatment-related expenditure per person or by dividing the revenue for the time period in question (e.g., day part, day, or month) by the number of treatment-hours available during that interval” (p. 86). To maximize RevPATH, Kimes and Singh (2009) suggested applying differential pricing and logical rate fences to build demand during off-peak periods and to establish appropriate prices for busy periods.

Rate Fences in the Hospitality Industry

The heart of revenue management is differential pricing, also referred to as price discrimination (Zhang & Bell, 2012). Differential pricing refers to segmentation of the market and differences in pricing based on the price elasticity characteristics of these segments (Mauri,

2012). The question then becomes how spas or other service firms can raise prices or charge different prices for different segments without risking losing customers. Some studies have suggested that service firms could use barriers (called rate fences) to ensure that different customers actually pay different prices (Cornell University, 2013; Mauri, 2012; Landman, 2011). According to Zhang and Bell (2012), “A ‘fence’ is a device that is designed to preserve market segmentation and limit spillover between market segments” (p. 147). Properly designed rate fences allow customers to self-segment on the basis of willingness to pay and also help differentiate the price (Zhang & Bell, 2012; Kimes & Singh, 2009; Hanks et al., 1992). Moreover, successful fences can make services and products less homogeneous and thus less comparable, which may in turn improve customers’ perceived fairness.

Hanks et al. (1992) classified rate fences into two categories in the hotel sector, namely physical and non-physical. Physical rate fences refer to room type, view, location, and presence of amenities; whereas non-physical rate fences include customer characteristics (i.e., frequency or volume of consumption), transaction characteristics (i.e., time of booking or reservation), and consumption characteristics (i.e., time or duration of use). Kimes and Singh (2009) further proposed two types of spa rate fences: physical rate fences and intangible rate fences. Similar to hotel rate fences, physical spa rate fences refer to treatment room location, size or type, choice of therapist, party size, treatment type, and absence or presence of certain amenities. Intangible rate fences refer to group membership or affiliation, time of day or week, treatment duration, walk-in versus reservation, timing of the reservation and whether the reservation is guaranteed. This study selected five attributes from the work of Kimes and Singh (2009), namely price, therapist selection, time of day, type of reservation, and advance booking requirement. Therapist selection refers to a specified therapist or no specified therapist. Time of day refers to peak and non-peak periods. Type of reservation includes guaranteed reservations (which require a credit card number) and not guaranteed reservations. Advance booking requirement refers to reservations

made 1 day, 1 week, or 2 weeks in advance. These rate fences were presented to the participants along with the spa rates.

Some studies have identified the rate fences used in the hospitality industry and customers' preferences for these rate fences (e.g., Denizci Guillet, Law, & Xiao, 2014; Liu, Denizci Guillet, Xiao, & Law, 2014; Kimes & Wirz, 2003; Hank et al., 1992). In the hotel industry, Hanks et al. (1992) conducted a series of tests in the United States and parts of Europe between 1990 and 1992 and identified five rate fences: rule type, advance requirement, refundability, changes allowed, and required time of stay. These rate restrictions helped separate business and leisure travelers, were easy to understand and were accepted by and attractive to customers who would not usually choose to stay with Marriott. Drawing on the rate fences identified by Hanks et al. (1992), Liu et al. (2014) further investigated whether Chinese and Western leisure travelers' preferences differed under the joint influence of room rates and restrictions when making hotel reservations. They tested room rates with four rate fences: rule type, advance requirement, refundability, and changes allowed. The Chinese and Western respondents did not express significantly different preferences for room rates, advance requirement, rule type, or refundability. The only significant difference concerned the changes allowed policy. These findings indicate that revenue managers of international hotel companies can take a globalized approach in designing rate restrictions.

In the airline industry, Denizci Guillet and Xu (2013) examined Chinese leisure travelers' preferences for airfare rate fences, where advance purchase, refundability, changes allowed, and price were the types of rate fences. Their results indicated that Chinese leisure travelers perceived advance purchase as the most important rate restriction, followed by price, refundability and changes allowed. Therefore, airline companies should design advance purchase restrictions in favor of Chinese leisure travelers. Alternatively, airlines could manipulate

refundability and changes allowed in their own best interests as these restrictions seem to be relatively less important for Chinese leisure travelers.

In the restaurant industry, Kimes and Wirtz (2002) selected five rate fences as the pricing mechanisms to investigate the perceived fairness of restaurant demand-based pricing across three countries, namely, Singapore, Sweden, and the United States. The five rate fences included lunch/dinner, weekday/weekend, time of day, table location, and coupon pricing. Their results indicated that fencing could be highly effective in improving the perceived fairness of demand-based pricing (Kimes & Wirtz, 2002). Specifically, demand pricing in the form of coupons, time-of-day pricing and lunch/dinner pricing were perceived as fair. Weekday/weekend pricing was seen as neutral to slightly unfair. Table location pricing was regarded as somewhat unfair, with potential negative customer reactions to this practice. Furthermore, the results were largely consistent for the three countries, indicating that the perceived fairness of revenue management practices is rather similar across countries.

In the spa industry, some spas have also started applying physical and intangible rate fences to control rates and arrivals and maximize revenue (e.g., Li, 2013; Cornell University, 2013; Kimes & Singh, 2009). However, few studies have examined customers' perceptions and preferences for spa rate fences. There is no indication of which spa rate restrictions are relatively more important for customers than others. Therefore, one objective of this study was to identify the relative importance of different types of rate restrictions that Chinese spa customers consider when booking spas in Hong Kong. The findings could help spa operators better understand spa goers' decision-making process and hidden needs.

Market Segmentation Theory

Market segmentation is an accepted tool to define markets and thereby allocate resources. Segmentation is the process of subdividing a heterogeneous market into a number of smaller homogeneous markets in response to differing product preferences among important market

segments (Smith, 1956). The process aims to improve the understanding of a given market, which can lead to greater customer satisfaction of different and specific needs. The combination of improved customer satisfaction and more efficient resource allocation may lead to greater competitive advantages and superior profitability. Therefore, market segmentation is a key element in the practice of revenue management (Zhang & Bell, 2012; Mauri, 2012).

The first stage of market segmentation involves the selection of suitable base variables. The most frequent segmentation variables include socio-demographic variables such as gender, age, education, occupation, and income; psychographic variables such as activities, interests, opinions, and life-style; and behavioral variables such as benefits sought, usage status, and usage rate. This study used spa customers' preferences for rate fences as a basis for segmentation.

In general, there are two major approaches for segmenting markets: a priori and post hoc, which are also known as commonsense and data-driven segmentation (Dolnicar & Grün, 2008; Dolnicar, 2004). In the case of a priori segmentation, a criterion variable for splitting up a global market is known in advance (Calantone & Mazanec, 1991). In the case of post hoc segmentation, the management has no prior knowledge about partitions in the market (Calantone & Mazanec, 1991). The number of segments and characteristics of each segment are determined by the data and methodology that are implemented in the study. This study employed "post hoc segmentation" method, which has been used extensively in the tourism and hospitality industries (e.g., Rid, Ezeuduji, & Pröbstl-Haider, 2014; Prayag, Disegna, Cohen, & Yan, 2013; Chen, Liu, & Chang, 2013; Masiero & Nicolau, 2011; Tkaczynski, Rundle-Thiele, & Beaumont, 2010; Park & Yoon, 2009; Andriotis, Agiomirgianakis, & Mihiotis, 2008; Mazanec, 1984; Calantone, Schewe, & Allen, 1980; Goodrich, 1980).

Despite the popularity of post hoc segmentation in tourism and hospitality, only a few studies have employed this approach in the spa-related industry research (e.g., Chen et al., 2013; Pesonen et al., 2011; Koh et al., 2010; Pesonen & Komppula, 2010; Gustavo, 2010; Mueller &

Kaufmann, 2001). For example, in a study conducted by Koh et al. (2010), which was to identify market segments among spa goers, based on a set of benefit variables. First, factor analysis was performed on 21 benefit variables to explore the dimensions underlying the benefits sought by spa goers. Four factors were identified, namely social, relaxing, healthy, and rejuvenating. Cluster analysis was then applied to classify spa goers into different groups based on these benefit factors. Three distinct segments of spa goers identified were escapists, neutralists, and hedonists. The findings of this study could help spas understand this promising market segment, and to identify any trends that can be generalized throughout the spa industry. Another similar study by Chen et al. (2013) identified seven customer service factors through exploratory and confirmatory factor analyses on senior managers and experienced consultants of the hot springs hotel industry, namely, health promotion treatments, mental learning, experience of unique tourism resources, complementary therapies, relaxation, healthy diet, and social activities. According to these seven service factors, the older adults were divided into three sub-groups using cluster analysis, namely holistic group, physiotherapy group, and leisure and recreation group. Finally, socio-demographic variables for describing the specific characteristics of the three groups were proposed. Additionally, Pesonen et al. (2011) applied K-means cluster analysis to find attractive segments for local wellbeing products. The findings show that tourists in the Savonlinna region, Finland, can be grouped into four segments, namely outdoor types, nature enthusiast, sightseers, and cultural tourists. These findings provide companies information on what kind of tourists are most interested in buying wellbeing products.

Although a few studies have been conducted to explore spa market segmentation, a very limited number of them have examined market segmentation from a rate restriction point of view. For this reason, this study makes an attempt to segment spa customers based on their preferences for spa rates and restrictions. This study will add knowledge to the segmentation theory by defining spa market segments. The findings will help spa operators understand the preferences

and expectations of different customer segments and design suitable rate restrictions that cater to the needs of each resulting customer segment.

METHODOLOGY

Questionnaire Design

A questionnaire was used as the data collection instrument. A conjoint analysis was applied to examine customer preferences in relation to spa rates and fences. Conjoint analysis is a marketing research that is concerned with the joint effect of two or more independent variables on the ordering of a dependent variable to measure the psychological judgments of customer preferences (Sohn & Ju, 2010). Conjoint analysis considers decision-making as trade-offs among several multi-attribute products or services (Min, Kim, Kwon, & Sohn, 2011; Sedmak & Mihalič, 2008). Conjoint analysis was chosen since it is a method that more realistically portrays customers' decisions than traditional techniques that treat each attribute independently. Currently, conjoint analysis has been adopted in a number of tourism and hospitality studies (e.g., Huertas-Garcia, García, & Consolación, 2014; Tyrrell, Paris, & Biaett, 2013; Millar & Baloglu, 2011; Chiam, Soutar, & Yeo, 2009; Sedmak & Mihalič, 2008; Thyne, Lawson, & Todd, 2006). Sedmak and Mihalič (2008) suggested that three main steps must be followed in conducting a conjoint analysis: (1) determine the attributes, (2) define related attribute levels, and (3) design which scenarios/profiles to present to respondents. These steps are explained below.

The rate fences for this study were selected from Kimes and Singh (2009). The five selected attributes were price, therapist selection, time of day, type of reservation, and advance booking requirement. Therapist selection refers to a specified therapist or no specified therapist. Time of day refers to peak and non-peak periods. Type of reservation includes guaranteed reservations (which require a credit card number) and not guaranteed reservations. Advance booking requirement refers to reservations made 1 day, 1 week, or 2 weeks in advance. These rate fences were presented to the participants along with the spa rates.

To determine the spa rate levels, we selected aromatherapy massage as the spa treatment for this study. According to Intelligent Spas (2005), both male and female customers rated aromatherapy massage as their most popular spa treatment during their last spa visit, and massage was the most likely treatment choice for their next visit. As defined by Goldberg (2001, p. 214), “the massage used in aromatherapy treatments is a relaxing massage using mainly effleurage and stroking movements”. Data were collected from both in-hotel and independent spas to gain a better understanding of 90-minute aromatherapy massage prices in Hong Kong. Our preliminary research collected prices from 45 in-hotel and independent spas. We selected first and third quartile prices to represent two price points for a 90-minute aromatherapy massage. Consequently, two spa rates were identified: HKD580 and HKD900.

Based on the five attributes and their levels, there were 48 ($2 \times 2 \times 2 \times 2 \times 3$) possible profiles. However, it would be too difficult for respondents to rate all of these profiles. Therefore, a fractional factorial design was used to generate a smaller fraction of the possible alternatives by considering only the main effects and assuming the interactions to be negligible (Hair, Black, Babin, Anderson, & Tatham, 2006; Koo, Tao, & Yeung, 1999). Based on the fractional factorial design, the 48 initial profiles were reduced to 16 profiles.

A survey questionnaire with three sections was devised. The first section included information about the respondents’ socio-demographic characteristics, that is, their gender, age, education level, and occupation. The second section presented 16 combinations of the five attributes generated by SPSS 20.0. A brief introduction explaining the spa rate fences and their levels was also provided for reference. The respondents were asked to rank the 16 combinations from most preferred to least preferred. The most preferred combination was ranked as 1 and the least preferred combination was ranked as 16. The third section obtained information relating to the respondents’ travel and spa experience variables, that is, the main purpose of the trip, travel

experiences, frequency of spa visits over the past 12 months, whether another consumer accompanied the primary consumer and the preferred type of spa.

The questionnaire was prepared in English and then translated into simplified Chinese using a back-to-back translation method to ensure its validity (Wilson, 2010; Behling & Law, 2000). The back-to-back translation method minimizes the possibility of unnecessary misunderstanding due to differences in linguistic expression. Moreover, the questionnaire was pilot tested among 21 Chinese respondents who had spa experiences and revealed only minor problems that were subsequently amended in the final version.

Data Collection

Chinese travelers visiting Hong Kong were selected as the sample in this study. The face-to-face survey was conducted at Avenue of Stars in Tsim Sha Tsui using a convenience sampling approach. The Avenue of Stars was chosen because it is the most visited attraction in Hong Kong (HKTB, 2014). To increase the response rate, incentives were offered to the respondents when seeking their participation. Incentives included McDonald's coupon as well as shopping bags. Both incentives had the same value in Hong Kong dollars. Each respondent took about 15 minutes to complete the questionnaire, and subsequently received an incentive. A response rate of about 80% was achieved. This high rate was probably due to the incentives offered and to the convenient setup of the Avenue of Stars, which has seating distributed across the boardwalk in a way that encouraged people to sit down and respond. To reach the right respondents, two screening questions, "Have you been to a spa before?" and "When was your most recent visit?" were asked before conducting the survey. The survey continued only if the customer had visited a spa in the previous six months. According to Orme (1998, p. 65), "sample size for conjoint studies generally ranges from about 150 to 1,200 respondents". In total, 400 questionnaires were collected over a period of about two months. Twenty-eight invalid questionnaires were discarded

due to missing data, leaving 372 questionnaires to be included in the analysis. This sample size is typical of that employed in commercial conjoint studies (Wittink & Cattin, 1989).

Data Analysis

This study segments Chinese spa customers based on their preferences for various rate fences using conjoint and cluster analysis. The combined use of conjoint and cluster method was first proposed by Green and Krieger (1991), which has been extensively used in the food industry (e.g., Mesías, Martínez-Carrasco, Martínez, & Gaspar, 2011; Rokka & Uusitalo, 2008). However, only a very limited number of studies applied this approach to tourism and hospitality (i.e., Adhikari, Basu, & Raj, 2013; Sedmak & Mihalič, 2008; Wong & Lam, 2002). This study takes the initiative to classify spa customers by applying conjoint and cluster analysis.

SPSS 20.0 was used to perform the descriptive analysis, conjoint analysis, cluster analysis and Chi-square tests. The data analysis process consisted of three steps. First, we performed a conjoint analysis to obtain the utility scores and attribute importance, which are two types of outputs of conjoint analysis (North, De Vos, & Kotze, 2003). Utility scores represent the preference or utility associated with a specific level of an attribute. Attribute importance is calculated from individual utility scores, and it measures how important an attribute is to the overall preferences. Second, using individual utility scores as the segmentation basis, we performed a post hoc cluster analysis to classify the Chinese spa customers into distinct and homogeneous subgroups. Eleven variables were used for clustering (resulting from 11 levels of five attributes). Third, a series of conjoint analysis was performed to identify the preferences of different consumer segments, based on the original ranking of the 16 profiles of each segment. As a follow-up procedure, a series of Chi-square tests was used to verify any significant differences between the segments in terms of the socio-demographic, travel and spa experience variables.

For the cluster analysis, both hierarchical and non-hierarchical procedures were used to cluster the respondents. A number of studies published in the leading tourism and hospitality journals have applied the combination of hierarchical and non-hierarchical to select the optimum cluster solution (e.g., Rid et al., 2014; Chen et al., 2013; Park, Lee, Choi, & Yoon, 2012; Harrill, Uysal, Cardon, Vong, & Dioko, 2011; Biran, Poria, & Oren, 2011; Tan & Lo, 2008; Bigne & Andreu, 2004; Mueller & Kaufmann, 2001). First, a hierarchical cluster analysis was used to determine the optimum number of clusters. The advantage of hierarchical approach is that it is not necessary to determine an adequate number of clusters from the outset. On the contrary, it helps determine an intermediate result which can be used to select the number of clusters. Second, K-means cluster analysis was employed to classify spa customers, with cluster centers from the hierarchical results as the initial seed points (Harrill et al., 2011). K-means cluster analysis is non-hierarchical clustering which has the characteristics that render it less sensitive to outliers (Park et al., 2012; Hair et al., 2006).

FINDINGS

Profiles of Respondents

The respondents' socio-demographic profiles, travel characteristics and spa experiences are summarized in Table 1. There were more female (58.87%) than male (41.13%) respondents. Just over three quarters (75.81%) of the respondents were in the under-26 and 26-35 age groups. Almost half of the respondents (46.36%) had a college/university degree. Over 86% had a job and the rest were either students, retirees or housewives.

Around 87% of the respondents were leisure travelers, and 42.2% thought that their travel experience was about average while 41.93% of them described themselves as experienced or very experienced travelers. The respondents who visited spas 5 times or more in the past 12 months accounted for more than a third (35.75%) of the entire sample. About 43.13% of the respondents typically preferred visiting spas with a friend/relative/colleague. When asked about

the preferred type of spa, just over two thirds (68.55%) of the respondents preferred visiting day spas.

**** Please insert Table 1 here ****

Conjoint Analysis Results

The conjoint analysis produced two types of outputs, namely, part-worth utilities and attribute importance. Part-worth utilities, also called utility scores, represent the preference or utility associated with a specific level of an attribute, with higher values corresponding to stronger preferences (North et al., 2003). Table 2 shows the partial utility scores for each attribute level. The respondents attached the highest importance to “HKD580” for price, “specified therapist” for therapist selection, “non-peak period” for time of day, “not guaranteed” for reservation type, and “one day advance booking” for advance booking requirement. The utility scores for advance booking requirement indicated a negative relationship; that is, the utility scores decreased as the number of advance reservation days increased. In other words, most spa goers preferred to make advance bookings fewer days in advance. One plausible explanation is that a spa is a place for relaxation and spa customers may patronize them when they are tired. Therefore, they prefer not to book their spa visits far in advance. In addition, as the respondents were leisure travelers to Hong Kong, most of them preferred non-peak to peak periods, as they were able to visit at any time of the day.

Attribute importance measures how important an attribute is to the overall preference (Denizci Guillet & Xu, 2013). The importance of different attributes can be compared directly. Attribute importance is measured on a ratio scale, which is the range of a particular attribute’s utility values expressed as a percentage (Orme, 2002). Table 2 describes the overall average importance values for the five attributes tested. Price had the highest average importance value (26.350%), followed by advance booking requirement (26.176%), type of reservation (16.786%), time of day (15.897%), and therapist selection (14.791%). Based on the findings, it seems that

price and advance booking requirement were more important than type of reservation, time of day, and therapist selection.

**** Please insert Table 2 here ****

Cluster Analysis Results

Hierarchical cluster analysis and K-means cluster analysis were applied to segment the spa customers based on the individual utility scores generated by conjoint analysis. By introducing individual utility scores into a hierarchical cluster analysis, the agglomeration schedules suggested that either four or five clusters was optimal. Then, the K-means clustering was applied to fine-tune the four- and five-cluster solutions. A comparison between the four-cluster and five-cluster results revealed that the four-cluster solution yielded the most meaningful and interpretable results. Therefore, four clusters of respondents were identified: treatment-oriented spa goers, guarantee-sensitive spa goers, price-sensitive spa goers and fewer days advance booking seekers. In order to identify the preferences of each segment, a series of conjoint analysis was performed on each cluster based on the original ranking of the 16 profiles. The attribute importance and utility scores for each respondent cluster are presented in Figure 1 and Table 3, respectively.

**** Please insert Figure 1 here ****

**** Please insert Table 3 here ****

Cluster 1: Treatment-oriented Spa Goers

This cluster accounted for 21.4% of the respondents. As indicated in Figure 1, respondents in this cluster attached the highest importance value to therapist selection (25.56%), and “specified therapist” clearly produced the highest utility. These respondents considered advance booking requirement to be the second most important factor, with an importance value of

23.27%. Interestingly, this was the only group that preferred more days than fewer days for advance booking requirement. As shown in Table 3, respondents in this cluster preferred 1 week advance reservation (utility=0.602), followed by 2 weeks (utility=0.029), and gave a negative utility score to 1 day advance booking (utility=-0.631). Another surprising characteristic is that they preferred guaranteed to not guaranteed reservations. Guaranteed reservations are beneficial to the spa, but can restrict spa goers' visiting behavior and they must provide their credit card details in advance. One plausible reason for this finding is that this type of spa customers preferred to specify their preferred therapist, so they were willing to book a few days in advance with a guaranteed reservation. Another possible explanation is that these spa goers were frequent spa customers who like to make regular plans for their spa experiences. These findings show that this customer segment emphasizes the selection of therapist and pays attention on the quality of treatment. Therefore, we designated this cluster as "treatment-oriented spa goers". This type of spa customers was also indifferent to price, to which they attached an importance value of only 11.83%. All of the characteristics of this cluster are welcomed and preferred by spa operators.

Cluster 2: Guarantee-sensitive Spa Goers

This cluster also comprised 21.4% of the entire sample. As shown in Figure 1, respondents in this cluster attached the highest importance value (31.27%) to type of reservation. In line with most of the spa customers surveyed, they were reluctant to guarantee reservations with a credit card. Therefore, we designated this cluster as "guarantee-sensitive spa goers". One possible reason is that these customers may have preferred to be flexible about the timing of their visits, so were reluctant to guarantee reservations with a card number. Considering the relative importance of the other attributes, these spa visitors viewed time of day as the second most important factor (24.95%), followed by advance booking requirement (16.43%), price (15.76%) and therapist selection (11.6%).

Cluster 3: Price-sensitive Spa Goers

Cluster 3 was the largest cluster, comprising a little over one third (34.14%) of the respondents. They clearly emphasized price as the main choice criterion. The relative importance value of price for this group reached 49.82%. Similar to most of the customers surveyed, they preferred the lower rate of HKD580. Therefore, we designated this cluster as “price-sensitive spa goers”. Other than price, these customers were largely indifferent to the other restrictions and assigned lower relative importance values to advance booking requirement (15.25%), therapist selection (12.4%), time of day (11.38%), and type of reservation (11.15%).

Cluster 4: Fewer Days Advance Booking Seekers

This cluster comprised almost a quarter (23.39%) of the respondents. As depicted in Figure 1, respondents in this cluster attached the highest importance value (53.62%) to advance booking requirement. In line with most of the respondents, this cluster chose 1 day as the preferred number of days for advance reservations. Examining the utility scores for advance booking requirement, there was a negative relationship between advance booking days and the utility scores. For instance, as the number of advance reservation days increased, the utility scores decreased. In other words, this type of customers preferred fewer days to more days for their advance booking. One plausible explanation is that a spa is a place for relaxation, and these spa visitors may have patronized spas when they were tired, so were reluctant to book several days in advance. Therefore, we designated this cluster as “fewer days advance booking seekers”. These respondents attached lower importance values to price (14.89%), therapist selection (11.4%), time of day (10.43%) and type of reservation (9.66%). This signifies that spa operators could design these four restrictions more flexibility.

To provide additional distinguishing information about the four segmented groups, a series of χ^2 analysis was performed to assess whether there were any significant differences between the clusters in terms of their socio-demographic profiles, travel and spa experience. However, the four segments identified in this study were not significantly different with regard to most of the

background variables. In line with the results of this study, some researchers also indicated that background variables, particularly demographic variables, do not necessarily correlate highly with attribute preferences (e.g., Millar, Mayer, & Baloglu, 2012; Formica & Uysal, 2002; Yüksel & Yüksel, 2002; Oh & Jeong, 1996; Uysal, Jurowski, McDonald, & Noe, 1994; Green & Krieger, 1991). The aim of this study was to identify different spa customers' perceptions and preferences, design suitable spa products, and thus appeal more spa customers. Therefore, it does not matter if there are not significant differences in some background variables.

DISCUSSION AND CONCLUSION

Based on customers' preferences for spa rates and restrictions, four segments were identified: treatment-oriented spa goers, guarantee-sensitive spa goers, price-sensitive spa goers, and fewer days advance booking seekers. Therefore, this study contributes to market segmentation theory by defining spa market segments which has been a largely unexplored area of research in the literature.

Although there are a few prior studies focusing on market segmentation in the spa-related industry (e.g., Chen et al., 2013; Pesonen et al., 2011; Koh et al., 2010; Pesonen & Komppula, 2010; Gustavo, 2010; Mueller & Kaufmann, 2001), none of these studies examine spa market segmentation from a rate fences perspective. The findings of this study build on those of previous studies (e.g., Cornell University, 2013; Kimes & Singh, 2009; Kimes, 2008; Lyon, 2008) that have suggested using rate fences and strategic levers for spa revenue management. For instance, Kimes and Singh (2009) recommended the use of rate fences as a measure to increase RevPATH, but did not examine customer preferences segmented by such fences. This study extends their findings by segmenting Chinese customers based on their preferences for spa rate fences. Furthermore, this study sheds light on Chinese spa customers, who represent the world's largest group of emerging leisure customers (Pizam, 2008). Although there are very few studies

related to spa revenue management in the literature, this study provides evidence that Chinese spa customers would be willing to accept rate fences introduced by spas.

As revenue management is relatively new in the spa industry compared with airlines and hotels, spa professionals may be less willing to utilize rate fences without knowing how their customers will react. However, this study provides support for the use of rate fences in the spa industry. Although the segments identified in this study can be considered exploratory in nature, they will enable spa marketers to better understand Chinese customers' preferences for rate fences, and to design spa rate restrictions preferred by different types of customers. The following paragraphs provide an overview of the four spa markets and a few ways that spas can appeal to them in an effort to increase their market share and revenue within these groups. Except for price-sensitive spa goers, the other three segments were of similar size.

First, price-sensitive spa goers accounted for a little over one third of the entire sample, comprising the largest customer group. Spa operators should pay attention to the characteristics of this largest group. As described, respondents in this segment regarded spa rates as by far the most important criterion when booking spas. They may be willing to pay for a treatment at a less attractive time or with an unfamiliar therapist if they can obtain a discount. Therefore, spa operators could provide them with a discounted price while at the same time imposing other restrictions to protect the spa's interests.

Second, the results indicated that guarantee-sensitive spa goers are reluctant to guarantee their reservations with a credit card. As these customers are most likely to cancel, spa operators should give them more flexibility to do so. In addition, spa professionals should pay attention to this segment when forecasting future business. As they are not concerned about therapist selection, price and advance booking requirement, it would be in the spa's interest to impose advance booking restrictions and assign an available therapist.

Third, fewer days advance booking seekers are most likely to be last minute bookers. This might apply to visitors who come to a destination for only a short time or those who are unfamiliar with the destination. Spa providers should keep last minute bookings available for these customers. Alternatively, spas could manipulate the price, therapist selection and treatment time in their own best interests, as these restrictions seem to be relatively less important for this segment.

Finally, the most popular customers are likely to be treatment-oriented spa goers, who pay attention on the quality of treatment and enjoy spa services. Their booking behavior is less likely to be influenced by restrictions, although they are keen to select the therapist and are willing to guarantee their reservations with a credit card. It is important to note that price is the least important attribute for these spa customers. Spa managers could charge higher prices to customers who wish to guarantee their desired treatment time or a particular spa therapist. In addition, as these spa goers are willing to book several days in advance, spas should make plans earlier for this segment to encourage advance booking. This could help revenue managers build a foundation of reservations, which would then help them to optimize their rates and inventory.

By understanding these customer preferences using the method introduced in this study, spas could assign a suitable set of rate restrictions that cater to the needs of each segment while protecting their own interests. Well-designed rate fences could assist spas in attracting different customer markets, which could in turn help spas increase their revenue and provide more accurate forecasts.

LIMITATIONS AND FUTURE RESEARCH

The findings of this study should be interpreted with caution and are subject to several limitations. First, to simplify the profiles we only selected five rate fences. Future studies could consider other types of rate fences, such as time of the week and length of treatment. Second, the sample only comprised mainland Chinese customers. Future studies could include customers

from other countries to determine whether the findings of this study also apply to them, or to test whether Chinese and Western customers have different preferences for spa products. The combined use of conjoint and cluster analysis as a methodology to examine market segmentation represents a new beginning for the hospitality industry and an opening up of research opportunities. Future studies could apply this methodology to other sectors of the industry, such as hotels and restaurants.

REFERENCES

- Adhikari, A., Basu, A., & Raj, S. P. (2013). Pricing of experience products under consumer heterogeneity. *International Journal of Hospitality Management*, 33, 6-18.
- Andriotis, K., Agiomirgianakis, G., & Mihiotis, A. (2008). Measuring tourist satisfaction: A factor-cluster segmentation approach. *Journal of Vacation Marketing*, 14(3), 221-235.
- Behling, O., & Law, K. S. (2000). *Translating questionnaires and other research instruments: Problems and solutions*. Thousand Oaks, CA: Sage Publications.
- Bigne, J. E., & Andreu, L. (2004). Emotions in segmentation: An empirical study. *Annals of Tourism Research*, 31(3), 682-696.
- Biran, A., Poria, Y., & Oren, G. (2011). Sought experiences at (Dark) heritage sites. *Annals of Tourism Research*, 38(3), 820-841.
- Bolton, L. E., Keh, H. T., & Alba, J. W. (2010). How do price fairness perceptions differ across culture? *Journal of Marketing Research*, 47(3), 564-576.
- Calantone, R. J., & Mazanec, J. A. (1991). Marketing management and tourism. *Annals of Tourism Research*, 18(1), 101-119.
- Calantone, R. J., Schewe, C., & Allen, C. T. (1980). Targeting specific advertising messages at tourist segments. In D. E. Hawkins, E. L. Shafer & J. M. Rovelstad (Eds.), *Tourism*

- Marketing and Management Issues* (pp. 149-160). Washington DC: George Washington University.
- Chen, K. H., Liu, H. H., & Chang, F. H. (2013). Essential customer service factors and the segmentation of older visitors within wellness tourism based on hot springs hotels. *International Journal of Hospitality Management*, 35,122-132.
- Chiam, M., Soutar, G., & Yeo, A. (2009). Online and off-line travel packages preferences: A conjoint analysis. *International Journal of Tourism Research*, 11(1), 31-40.
- Cornell University. (2013). *Revenue management and the spa industry*. Retrieved from <http://blogs.cornell.edu/armapp>
- Cross, Robert G. (1997). *Revenue management*. New York: Broadway Books.
- Denizci Guillet, B., Law, R., & Xiao, Q. (2014). Rate fences in hotel revenue management and their applications to Chinese leisure travelers: A fractional factorial Design approach. *Cornell Hospitality Quarterly*, 55(2), 186-196.
- Denizci Guillet, B., & Xu, Y. E. (2013). Chinese leisure travelers' preferences of rate fences in the airline industry. *Journal of Hospitality Marketing and Management*, 22(3), 333-348.
- Dolnicar, S. (2004). Beyond 'commonsense segmentation': A systematics of segmentation approaches in tourism. *Journal of Travel Research*, 42, 244-250.
- Dolnicar, S., & Grün, B. (2008). Challenging factor cluster segmentation. *Journal of Travel Research*, 47(1), 63-71.
- Fenard, E. (2013). *Yield management in the spa: A look at the principles, benefits, challenges and opportunities*. Retrieved from http://hotelexecutive.com/business_review/2112/yield-management-in-the-spa-a-look-at-the-principles-benefits-challenges-and-opportunities

- Formica, S., & Uysal, M. (2002). Segmentation of travelers based on environmental attitudes. *Journal of Hospitality and Leisure Marketing*, 9(3/4), 35-49.
- Goldberg, L. (2001). *Massage and aromatherapy - A practical approach*. Cheltenham, UK: Nelson Thornes.
- Goodrich, J. S. (1980). Benefit segmentation of U.S. international travelers: An empirical study with American express. In D. E. Hawkins, E. L. Shafer & J. M. Rovelstad (Eds.), *Tourism Marketing and Management Issues* (pp. 133-148) . Washington DC: George Washington University.
- Green, P. E., & Krieger, A. M. (1991). Segmenting markets with conjoint analysis. *Journal of Marketing*, 55, 20-31.
- Gustavo, N. S. (2010). A 21st-century approach to health tourism spas: The case of Portugal. *Journal of Hospitality and Tourism Management*, 17, 127-135.
- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate data analysis*. Upper Saddle River, New Jersey: Prentice-Hall International.
- Hanks, R. D., Cross, R. G., & Noland, R. P. (1992). Discounting in the hotel industry: A new approach. *Cornell Hotel and Restaurant Administration Quarterly*, 33(1), 15-23.
- Harrill, R., Uysal, M., Cardon, P. W., Vong, F., & Dioko, L. (2011). Resident attitudes towards gaming and tourism development in Macao: Growth machine theory as a context for identifying supporters and opponents. *International Journal of Tourism Research*, 13, 41-53.
- HKTB (Hong Kong Tourism Board). (2014). *About Hong Kong Tourism Board*. Retrieved from <http://www.discoverhongkong.com/eng/index.jsp>
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Newbury Park, CA: Sage Publications.

- Huertas-Garcia, R., García, M. L., & Consolación, C. (2014). Conjoint analysis of tourist choice of hotel attributes presented in travel agent brochures. *International Journal of Tourism Research, 16*, 65-75.
- Intelligent Spas. (2005). *Female versus male spa consumers: Survey of behaviors, expectations, preferences and predictions*. Retrieved from [http:// www.intelligentspas.com/main/main.asp](http://www.intelligentspas.com/main/main.asp)
- Kim, S. H., Kim, S., Huh, C., & Knutson, B. (2010). A predictive model of behavioral intention to spa visiting: An extended theory of planned behavior. In *Paper presented at Hospitality and Tourism Management International CHRIE Conference-Refereed Track* (pp. 1-8). Amherst, USA: University of Massachusetts.
- Kimes, S. E. (1989). Yield Management: A tool for capacity-constrained service firms. *Journal of Operations Management, 8*(4), 348-63.
- Kimes, S. E. (2008). Hotel revenue management: Today and tomorrow. *Cornell Hospitality Report, 8*(14), 1-15.
- Kimes, S. E., & Singh, S. (2009). Spa revenue management. *Cornell Hospitality Quarterly, 50*(1), 82-95.
- Kimes, S. E., & Wirtz, J. (2002). Perceived fairness of demand-based pricing for restaurants. *Cornell Hotel and Restaurant Administration Quarterly, 43*(1), 31-38.
- Kimes, S. E., & Wirtz, J. (2003). Has revenue management become acceptable? Findings from an international study on the perceived fairness of rate fences. *Journal of Service Research, 6*(2), 125-135.
- Koh, S., Yoo, J., & Boger, C. (2010). Importance-performance analysis with benefit segmentation of spa goers. *International Journal of Contemporary Hospitality Management, 22*(5), 718-735.

- Koo, L. C., Tao, F. K. C., & Yeung, J. H. C. (1999). Preferential segmentation of restaurant attributes through conjoint analysis. *International Journal of Contemporary Hospitality Management*, 11(5), 242-250.
- Landman, P. (2011). *Spa revenue management techniques: Dynamic pricing, dynamic available & menu engineering*. Retrieved from <http://www.xotels.com/en/revenue-management/spa-revenue-management-techniques>
- Li, J. (2013). *Strategic levers application in spa industry*. Retrieved from <http://blogs.cornell.edu/armapp/2013/03/27/strategic-levers-application-in-spa-industry>
- Liu, W., Denizci Guillet, B., Xiao, Q., & Law, R. (2014). Globalization or localization of consumer preferences: The case of hotel room booking. *Tourism Management*, 41, 148-157.
- Lyon, L. (2008). *Spa revenue (yield) management*. Retrieved from http://www.4hoteliers.com/4hots_fshw.php?mwi=2735
- Madanoglu, M., & Brezina, S. (2008). Resort spas: How are they massaging hotel revenues? *International Journal of Contemporary Hospitality Management*, 20(1), 60-66.
- Mak, A., Wong, K., & Chang, R. (2009). Health or self-indulgence? The motivations and characteristics of spa-goers. *International Journal of Tourism Research*, 11(2), 185-199.
- Masiero, L., & Nicolau, J. L. (2011). Tourism market segmentation based on price sensitivity: Finding similar price preferences on tourism activities. *Journal of Travel Research*, 51(4), 426-435.
- Mauri, A. G. (2012). *Hotel revenue management principles and practice*. Milano: Pearson Italia.
- Mazanec, J. A. (1984). How to detect travel market segments: A clustering approach. *Journal of Travel Research*, 23, 17-21.

- Mesías, F., Martínez-Carrasco, F., Martínez, J. M., & Gaspar, P. (2011). Functional and organic eggs as an alternative to conventional production: A conjoint analysis of consumers' preferences. *Journal of the Science of Food and Agriculture*, *91*, 532-538.
- Millar, M., & Baloglu, S. (2011). Hotel guests' preferences for green guest room attributes. *Cornell Hospitality Quarterly*, *52*(3), 302-311.
- Millar, M., Mayer, K. J., & Baloglu, S. (2012). Importance of green hotel attributes to business and leisure travelers. *Journal of Hospitality Marketing and Management*, *21*(4), 395-413.
- Min, S. H., Kim, H. Y., Kwon, Y. J., & Sohn, S. Y. (2011). Conjoint analysis for improving the e-book reader in the Korean market. *Expert Systems with Applications*, *38*(10), 12923-12929.
- Mueller, H., & Kaufmann, E. L. (2001). Wellness tourism: Market analysis of a special health tourism segment and implications for the hotel industry. *Journal of Vacation Marketing*, *7*(1), 5-17.
- North, E. J., De Vos, R. B., & Kotze, T. (2003). The importance of apparel product attributes for female buyers. *Journal of Family Ecology and Consumer Science*, *31*, 41-51.
- Oh, M., & Jeong, M. (1996). Improving marketers' predictive power of customer satisfaction on expectation-based target market levels. *Hospitality Research Journal*, *19*(4), 65-85.
- Orme, B. (1998). *Sample size issues for conjoint analysis studies*. Sawtooth software research paper series. Sequim, WA: Sawtooth Software, Inc.
- Orme, B. K. (2002). *Interpreting the results of conjoint analysis*. Retrieved from <http://www.sawtoothsoftware.com/download/techpap/interpca.pdf>
- Oyserman, D., Coon, H. M., & Kimmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, *128* (1), 3-72.

- Park, D. B., Lee, K. W., Choi, H. S., & Yoon, Y. (2012). Factors influencing social capital in rural tourism communities in South Korea. *Tourism Management*, 33, 1511-1520.
- Park, D. B., & Yoon, Y. S. (2009). Segmentation by motivation in rural tourism: A Korean case study. *Tourism Management*, 30, 99-108.
- Pesonen, J., & Komppula, R. (2010). Rural wellbeing tourism: Motivations and expectations. *Journal of Hospitality and Tourism Management*, 17(1), 150-158.
- Pesonen, J., Laukkanen, T., & Komppula, R. (2011). Benefit segmentation of potential wellbeing tourists. *Journal of Vacation Marketing*, 17(4), 303-314.
- Pizam, A. (2008). Introduction: Tourism and hospitality management in China. *International Journal of Hospitality Management*, 37(3), 323-324.
- Prayag, G., Disegna, M., Cohen, S. A., & Yan, H. L. (2013). Segmenting markets by bagged clustering: Young Chinese travelers to Western Europe. *Journal of Travel Research*, Retrieved from <http://jtr.sagepub.com/content/early/2013/12/16/0047287513514299>
- Rid, W., Ezeuduji, I. O., & Pröbstl-Haider, U. (2014). Segmentation by motivation for rural tourism activities in the Gambia. *Tourism Management*, 40, 102-116.
- Rokka, J., & Uusitalo, L. (2008). Preference for green packaging in consumer product choices- do consumers care? *International Journal of Consumer Studies*, 32(5), 516-525.
- Sedmak, G., & Mihalič, T. (2008). Authenticity in mature seaside resorts. *Annals of Tourism Research*, 35(4), 1007-1031.
- Smith, W. R. (1956). Product differentiation and market segmentation as alternative marketing strategies. *Journal of Marketing*, 21, 3-8.
- Sohn, S. Y., & Ju, Y. H. (2010). Conjoint analysis for recruiting high quality students for college education. *Expert Systems with Applications*, 37, 3777-3783.

- Tabacchi, M. H. (2010). Current research and events in the spa industry. *Cornell Hospitality Quarterly*, 51, 102-117.
- Tan, A. Y. F., & Lo, A. S. Y. (2008). A benefit based approach to market segmentation: A case study of an American specialty coffeehouse chain in Hong Kong. *Journal of Hospitality and Tourism Research*, 32(3), 342-362.
- Thyne, M., Lawson, R., & Todd, S. (2006). The use of conjoint analysis to assess the impact of the cross-cultural exchange between hosts and guests. *Tourism Management*, 27, 201-213.
- Tkaczynski, A., Rundle-Thiele, S., & Beaumont, N. (2010). Destination segmentation: A recommended two-step approach. *Journal of Travel Research*, 49(2), 139-152.
- Tyrrell, T., Paris, C. M., & Biaett, V. (2013). A quantified triple bottom line for tourism: Experimental results. *Journal of Travel Research*, 52(3), 279-293.
- Uysal, M., Jurowski, C., Noe, F., & McDonald, C. (1994). Environmental attitude by trip and visitor characteristics. *Tourism Management*, 15, 284-294.
- Wilson, J. (2010). *Essentials of business research: A guide to doing your research project*. London: Sage Publications.
- Wittink, D. R., & Cattin, P. (1989). Commercial uses of conjoint analysis: An update. *Journal of Marketing*, 53, 91-97.
- Wong, K. K. F., & Lam, C. Y. (2002). Predicting hotel choice decisions and segmenting hotel consumers: A comparative assessment of a recent consumer based approach. *Journal of Travel & Tourism Marketing*, 11(1), 17-33.
- Yüksel, A., & Yüksel, F. (2002). Market segmentation based on tourists' dining preferences. *Journal of Hospitality and Tourism Research*, 26(4), 315-331.

Zhang, M., & Bell, P. (2012). Price fencing in the practice of revenue management: An overview and taxonomy. *Journal of Revenue and Pricing Management*, 11(2): 146-159.

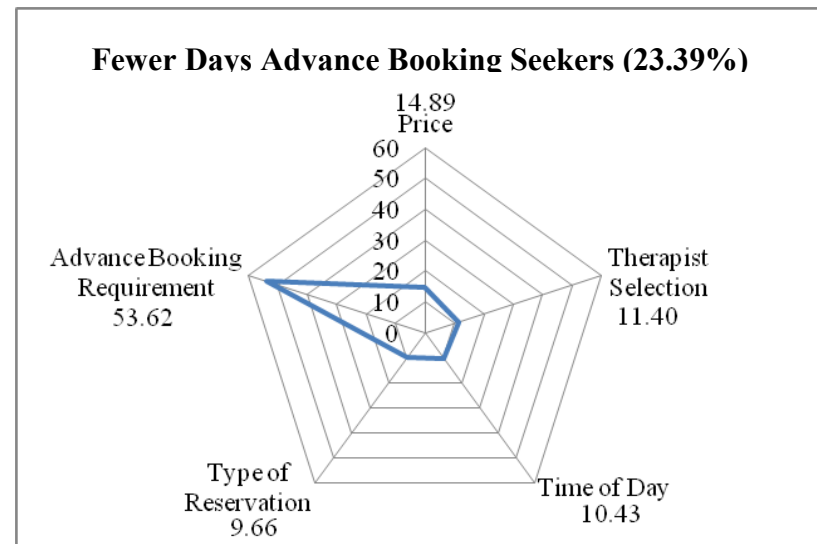
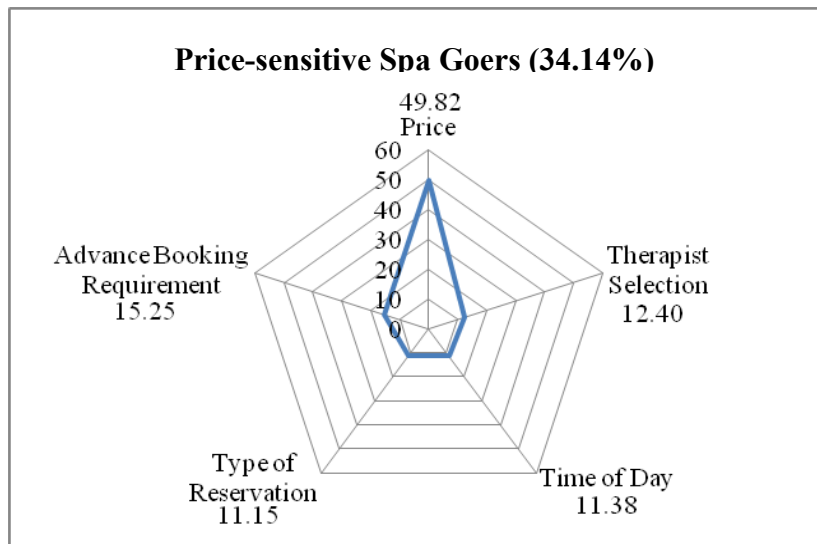
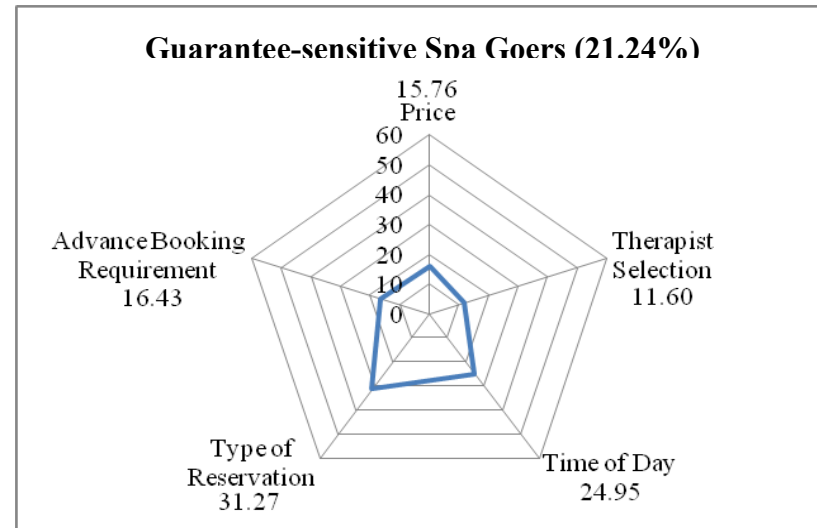
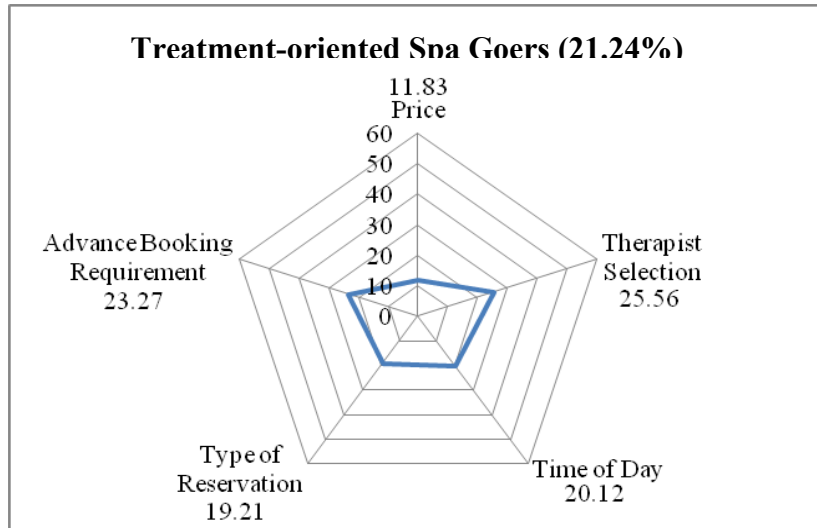


Figure 1 Attribute Importance by Clusters

Table 1 Respondents' Socio-demographic Profiles, Travel Characteristics and Spa Experiences

Variable	%
Gender	
Male	41.13
Female	58.87
Age	
Below 26	24.73
26-35	51.08
36-45	19.09
46 or above	5.11
Education Level	
Secondary/high school or below	43.67
College/university	46.36
Graduate level or higher	9.97
Occupation	
Working	86.79
Non-working*	13.21
Main purpose of the trip	
Vacation	87.10
Visiting friends/relatives	6.45
Business/meeting	6.45
Travel experience	
Inexperienced – so far only one trip	5.65
Not experienced	10.22
Above average	42.20
Experienced	33.60
Very experienced	8.33
Frequency of spa visits in a year	
2 times or less	36.29
3-4 times	27.96
5-9 times	18.01
10 times or more	17.74
When you visit a spa, do you typically visit	
Alone	19.95
With your spouse/partner	14.02
With one of your friends or relatives or colleagues	43.13
With a group of your friends or relatives or colleagues	22.91
Preferred type of spa	
Hotel spa	6.72
Day spa	68.55
Medical spa	24.73

Note: *Non-working in this study refers to respondents who are students, retired, and housewives.

Table 2 Partial Utility Scores and Attribute Importance

Attribute	Attribute Level	Utility	Std. Error	Attribute Importance (%)
Price	HKD900	-1.693	0.125	26.350
	HKD580	1.693	0.125	
Therapist Selection	Specified therapist	0.677	0.125	14.791
	No specified therapist	-0.677	0.125	
Time of Day	Peak period	-0.863	0.125	15.897
	Non-peak period	0.863	0.125	
Type of Reservation	Guaranteed	-0.422	0.125	16.786
	Not guaranteed	0.422	0.125	
Advance Booking Requirement	1 day	1.143	0.167	26.176
	1 week	-0.197	0.196	
	2 weeks	-0.946	0.196	

Note: The highest utility score of each attribute is shown in bold.

Table 3 Average Part-worth Utilities for the Four Clusters

Attribute	Attribute level	Treatment-oriented Spa Goers (21.24%)	Guarantee-sensitive Spa Goers (21.24%)	Price-sensitive Spa Goers (34.14%)	Fewer Days Advance Booking Seekers (23.39%)
Price	HKD 900	-0.353	-0.785	-3.584	-0.974
	HKD 580	0.353	0.785	3.584	0.974
Therapist Selection	Specified therapist	1.476	0.424	0.362	0.641
	No specified therapist	-1.476	-0.424	-0.362	-0.641
Time of Day	Peak	-1.070	-1.707	-0.522	-0.407
	Non-peak	1.070	1.707	0.522	0.407
Type of Reservation	Guaranteed	1.008	-2.285	-0.285	-0.228
	Not guaranteed	-1.008	2.285	0.285	0.228
Advance Booking Requirement	1 day	-0.631	0.451	0.717	4.004
	1 week	0.602	-0.417	-0.275	-0.608
	2 weeks	0.029	-0.034	-0.442	-3.396

Note: The highest utility score of each attribute in each cluster is shown in bold.