How do restaurant customers make tradeoffs among rate fences?

Basak Denizci Guillet, Ph.D.
Associate Professor
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

Rob Law, Ph.D.
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
E-mail: rob.law@polyu.edu.hk

Deniz Kucukusta, Ph.D.
Assistant Professor
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

Corresponding Author: Basak Denizci Guillet

Submitted exclusively to

Abstract

This study examines how restaurant customers make tradeoffs among several restaurant rate fences using a sample of mainland Chinese travelers to Hong Kong. Six restaurant rate fences (lunch/dinner pricing, weekday/weekend pricing, table location pricing, restricted coupon pricing, meal period, and reservation and seating policy) and menu price were selected, and a conjoint analysis was adopted. Our findings reveal that price, restricted coupon pricing, and meal period are the most important attributes when restaurant customers choose a restaurant. This study is the first attempt to examine the relative importance of different types of restaurant rate fences. The findings will help restaurant operators to better understand Chinese travelers' decision-making process and design appropriate rate fences accordingly.

Keywords: revenue management, restaurant rate fences, rate restriction, conjoint analysis

How do restaurant customers make tradeoffs among rate fences?

1. Introduction

Rate fences, also known as rate restrictions or terms and conditions, are the rules that operators use to segment customers and justify why different customers pay different prices (Mauri, 2007). Well-designed rate fences help customers to self-segment into different rate classes, thereby assisting operators in effectively attracting customers who are willing to accept certain restrictions and conditions with lower prices (Hanks, Cross, & Noland, 1992; Kimes & Wirtz, 2003; Wirtz & Kimes, 2007). Rate fences are highly popular and widely used in all industries that implement revenue management practices (Guillet, Law, & Xiao, 2013; Guillet & Xu, 2013; Kucukusta & Guillet, 2014; Liu, Guillet, Xiao, & Law, 2014). They also justify price discrimination, which is the main rationale for implementing dynamic pricing policies for different groups of customers in the revenue management context.

The typical rate fence practices in the restaurant industry include charging different rates depending on the time of day or week, table location, party size, or menu type (Kimes & Wirtz, 2003). Hong Kong is a popular tourist destination, attracting over 59 million visitors and tourism expenditures of HK$332.29 billion in 2015 (Hong Kong Tourism Board, 2015). Visitors from mainland China accounted for 77.3% of total arrivals, making the country Hong Kong's major visitor source market (HKTB, 2015). Evidence of the claim that "if shopping is Hong Kong's national sport, eating is the national hobby or obsession" (Suite101.com, 2012) can be found in the city's more than 9,000 restaurants offering a great variety of cuisines such as dim sum and foods originating from various regions of China, together with an array of other Eastern and Western gastronomic delights (Law, To, & Goh, 2008). Law et al. (2008) claim that Hong Kong has more restaurants per capita than anywhere else in the world. In the context of Hong Kong's tourism and foodservice industry, Chinese visitors have become important targets for Hong Kong restaurant operators.

Investigating how Chinese restaurant customers value different rate fences when they choose a restaurant is thus an important endeavor. Understanding these customers' perceptions of and preferences for pricing policies will allow restaurant operators to assess their current position, consider rate fences as a competitive tool, and seek opportunities to improve existing

products and services. The framework for the research reported here is based on consumer utility theory and information integration theory (IIT), and the results extend those theories to the restaurant industry. The study's specific objectives were as follows.

(1) To identify the relative importance of different types of restaurant rate fences to mainland Chinese travelers dining out in Hong Kong.

(2) To determine the preferred restaurant rate fences among Chinese travelers.

(3) To investigate the relative importance of various restaurant rate fences based on sociodemographic information and dining behavior.

2. Literature review

2.1 Restaurant revenue management

Kimes (1999, p. 17) defines restaurant revenue management as "selling the right seat to the right customer at the right price and for the right duration." The determination of "right" is based on restaurants' delivery of the greatest value or utility to customers while achieving the greatest possible revenue at the same time. Revenue management started in the airline industry and then hotels and other service industries followed. There are several important characteristics that each industry should have to implement revenue management practice. These characteristics include relatively fixed capacity, predictable demand, perishable inventory, time variable demand, appropriate cost and pricing structure (Kimes et al., 1998; Kimes 2004). Similar to the concept of revenue per available room in hotels, revenue management performance measure for restaurants is revenue per available seat hour (RevPASH) (Kimes et al., 1998). RevPASH is a combination of how full the restaurant is and average spending of each customer which similar to occupancy and average daily rates in the hotel setting. According to Kimes et al. (1998), the purpose of the restaurants when implementing revenue management is to increase their revenue by effectively managing seating duration and demand-based pricing.

Just as hotels offer different room rates according to demand, restaurant operators can also implement price incentives to generate more revenue. For example, they can design different menu pricing schemes based on customers' willingness to dine (or make reservations) during off-peak periods. Most restaurants also offer happy hours, early-bird specials, and restricted-use coupons to boost demand during slow periods. In addition, some restaurants take advantage of high-demand periods (e.g., public holidays) by offering only special menus.

Similar to hotel revenue management, restaurant revenue management generally involves two strategic levers: duration control and demand-based pricing (Beldona & Namasivayam, 2006; Kimes, 1999, 2004; Kimes, Chase, Choi, Lee, & Ngonzi, 1998; Kimes & Wirtz, 2003). Duration control in the context of restaurants refers to controlling customers' dining time by increasing the efficiency of service delivery to reduce the amount of time customers spend at the table (Kimes, 2004). Kimes et al. (1998) suggest that duration control can be achieved through either internal (not involving customers) or external means (involving customers) (see also Kimes, 1999, 2004; Kimes & Wirtz, 2003). Examples of internal duration-control methods include regulating and redesigning service processes, forecasting customer arrivals, and implementing inventory control if (the restaurant accepts reservations), whereas external duration-control methods include booking fees or guarantees and such behavioral approaches as restricting the length of time that customers can use a table (Kimes, 2004). Internal methods are less likely to affect customer satisfaction (Kimes, 2004; Kimes & Wirtz, 2003).

The second strategic lever of restaurant revenue management is variable pricing. When industry professionals use price as a revenue management tool, a common method is to offer discounts (Kimes & Wirtz, 2003). However, discounting is only part of the story. Restaurant operators need to think beyond happy hours and restricted coupons and start developing methods of offering differential prices to meet the demand level at a given time (Kimes, 1999). Hotels and airline companies use rate fences to offer discounts on inventory to generate more revenue while simultaneously preventing customers who could actually pay a higher rate from taking advantage of those discounts. Rate fences, which, as noted above, are also known as rate restrictions or terms and conditions, can be defined as "logical, rational rules or restrictions that are designed to allow customers to segment themselves into appropriate rate categories based on their needs, behavior, or willingness to pay" (Hanks et al., 1992, p. 21). Restaurant operators can also consider implementing differential pricing policies for peak and off-peak periods. Kimes (1999) proposes two types of rate fences for restaurant operators: 1) physical rate fences, including table location, party size, menu type, and absence or presence of certain amenities, and 2) intangible rate fences, including group membership or affiliation, time of day or week, meal duration of the meal, presence or timing of reservations, and whether a reservation is guaranteed (see Table 1).

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

2.2 Perceived fairness of restaurant demand-based pricing

Previous studies find that restaurants are willing to implement duration-control methods by changing their service delivery process (Kimes, Barrash, & Alexander, 1999; B. Sill & Decker, 1999; B. T. Sill, 1991) but unwilling to implement demand-based pricing because customers are believed to perceive such pricing practices as unfair (Kimes & Wirtz, 2003). Perceived fairness has been investigated in a variety of industries (Campbell, 1999; Kahneman, Knetsch, & Thaler, 1986; Kaufmann, Ortmeyer, & Smith, 1991; Kimes, 1994; Thaler, 1985; Urbany, Madden, & Dickson, 1989), and has been found to be a key factor in maintaining customer satisfaction and loyalty and long-term profitability (Kimes & Wirtz, 2003).

Kimes and Wirtz (2003) select five rate fences as 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 include lunch/dinner, weekday/weekend, time of day, table location, and coupon pricing. Their results indicate that fencing can be highly effective in improving the perceived fairness of demand-based pricing (Kimes & Wirtz, 2003). More specifically, they find that demand-pricing in the form of coupons (two for the price of one), time-of-day pricing, and lunch/dinner pricing is perceived as fair, whereas weekday/weekend pricing is seen as neutral to slightly unfair. Table location pricing is seen as somewhat unfair, with potentially negative customer reactions to the practice. Furthermore, the results were largely consistent across the three countries, indicating that the perceived fairness of revenue management practices is little influenced by culture (Kimes & Wirtz, 2003).

2.3 Consumer utility and information integration theory

Utility is the conceptual basis for measuring consumer demand in economic theory, and is subjective and distinct to each individual. In recent years, the theory of consumer utility has gone beyond the traditional economic theory of consumer demand. According to Lancaster's (1971) model of consumer behavior, the theory of brand preferences states that goods are valued for the attributes they possess and that differentiated products are merely different bundles of attributes. In their individual decision-making processes, consumers rely on judgments, impressions, and evaluations of all competing product attributes before making their final choice. In this process, consumers combine (integrate) information about different determinant attributes to form an overall impression of product profiles, a process upon which conjoint analysis is built and which

is known as information integration theory (IIT; Louviere, 1988). The final choice is the one that provides the individual with the highest level of total utility. IIT and the theory of consumer utility together provide the framework of this study. More specifically, this study extends both theories to the hospitality industry.

3   METHODOLOGY

3.1 Rate fences and hypothesis

The purpose of rate fences is to allow customers to self-segment according to their willingness to pay and various needs (Hanks et al., 1992; Kahneman et al., 1986). To be perceived as fair, however, rate fences need to be logical and transparent (Hanks et al., 1992; Kimes & Wirtz, 2003). The six rate fences selected for this study, adopted from Kimes and Wirtz (2003) and presented in Table 2, are (1) price, (2) lunch/dinner pricing, (3) weekday/weekend pricing, (4) table location pricing, (5) restricted coupon pricing, (6) meal period, and (7) reservation and seating policy. Restaurants can offer different menus based on time-based rate fences, such as lunch and dinner menus and weekday and weekend menus. In Hong Kong, many hotels use a view of Victoria Harbour as a room pricing fence when designing service packages for customers. Such a view is also a rate fence possibility for many of Hong Kong's restaurant operators. Coupons are regarded as an important controlled-availability fence for restaurant operators, with Bitta and Monroe (1981) and Gupta and Cooper (1992) suggesting that a price threshold of 15% and price discount saturation point of 20-30% change customers' purchase intentions. In other words, a 15% price reduction is sufficient to attract customers to a sale (Bitta & Monroe, 1981), and discounts over 30% are largely wasted (Gupta & Cooper, 1992). Therefore, in the current study we presented restricted coupons to customers as a pricing rate fence in the form of a 20%-off coupon, 15%-off coupon, or no coupon.

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

Restaurant rate fences are often used in conjunction with menu prices. Dim sum is a highly popular cuisine in Hong Kong, and was thus selected as the menu item in this study. Dim sum is a style of Chinese cuisine prepared as small bite-sized or individual portions of food traditionally served in small steamer baskets or on small plates (CNNGo.com, 2012; About.com, 2012). A traditional dim sum brunch includes various types of steamed buns such as cha siu buns, dumplings, and flour rolls containing a range of ingredients, including beef, chicken, pork,

prawns, and vegetarian options. Many dim sum restaurants also offer plates of steamed green vegetables, roasted meats, congee porridge, and soups. Desserts are also available, with many dim sum restaurants offering the customary egg tarts (CNNGo.com, 2012; About.com, 2012). Because dishes are served on small plates, people normally order a number of dim sum dishes, similar to tapas in Spanish cuisine or mezze in Mediterranean cuisine. As there are numerous dim sum dishes, we conducted preliminary research to identify the most popular for inclusion in the study.

According to a survey conducted by Nielson in 2012, Openrice.com is Hong Kong's most popular dining guide, with 95% of respondents choosing it when searching for dining information (Openrice.com, 2012). Accordingly, we collected the names of dim sum dishes from 30 Hong Kong restaurants recommended by Openrice.com to obtain a better understanding of the most popular dishes, along with their price points. As a result, we identified 13 steamed dim sum dishes, three steamed flour roll dishes, three congee dishes, and five steamed rice dishes that all 30 restaurants offer. As a follow-up, we conducted a survey asking the scenario question "What are the dim sum dishes you are likely to order for a two-person meal?" and providing a virtual menu with all 30 dishes identified. Fifty respondents participated in the survey, and indicated that, on average, they would order five dim sum dishes. The five most popular dishes among the 50 respondents were steamed prawn dumplings, steamed minced pork dumplings with crab roe, steamed chicken feet with black bean sauce, steamed buns with egg yolk paste, and steamed flour rolls with barbecued pork. We also collected prices for these five dishes from respondents, and selected the first-, second-, and third-quartile prices to represent three price points for each menu item. We added up the first-quartile price for each menu item to calculate the first price point on the dim sum menu, and then repeated the procedure for the second- and third-quartile prices. As shown in Table 3, the five-item dim sum menu prices used in the study were HK\$92, HK\$133, and HK\$190.

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

Based on the six rate fences and menu prices, we argue that customers' preferences for a restaurant depend on the joint influence of menu price and rate fences. We thus analyze the value that mainland Chinese tourists visiting Hong Kong attach to particular rate fences in conjunction with the menu price. Therefore, the main hypothesis is as follows:

H1: There are significant differences in the degree of importance that mainland Chinese travelers visiting Hong Kong attach to price, lunch/dinner pricing, weekday/weekend pricing, table location pricing, restricted coupon pricing, meal period, and reservation and seating policy.

3.2 Conjoint model and fractional factorial design

Customers seldom consider each attribute of a product/service independently when they make purchasing decisions. Instead they consider all product attributes as a whole. Conjoint analysis is a widely used marketing method for identifying and understanding the joint effects of product attributes on customer preferences for a product/service (Hobbs, 1996). It engages respondents in a more realistic environment to predict overall customer preferences by aggregating the utility scores of all individual product attributes (Levy, 1995). The attraction of the conjoint-based approach is that it can help to elucidate how customers make trade-offs among product attributes (Koo, Tao, & Yeung, 1999).

There are two types of data collection for conjoint analysis: the two-factor-at-a-time trade-off method and the multiple-factor full-concept method (Koo, Tao, & Yeung, 1999). In this study, there are two levels in three of the four rate fences, and three levels in one of them. Therefore, the full-concept method is used, and the number of possible combinations of price and rate fences should be $3*2*2*2*3*3*3 = 648$. Respondents were asked to rank all possible combinations according to their preferences. However, 648 is a large number and would have been overwhelming for respondents to rank. The SPSS conjoint method uses a fractional factorial design to generate a smaller fraction of all possible alternatives, considering only the main effects, with the interactions assumed to be negligible (Green, 1974). Fractional factorial design presents a suitable fraction of all possible combinations of attribute levels. More specifically, orthogonal array enables respondents to review 25 to 30 profiles, thereby reducing respondents' review burden "without sacrificing the predictive power contained in the original design (Ding, Geschke, & Lewis, 1991, p. 9). Eventually, fractional factorial design generated 16 combinations of attribute levels for respondents to rank in this study.

Conjoint analysis is related to experimentation in the traditional sense, in that it determines the effects of levels of independent variables on a dependent variable. In this study, which involves human behavior, it is necessary to also determine the effects of levels of certain variables (equivalent to independent variables) on the dependent variables. In most cases, this is

an overall rating, purchase decision, or adoption decision. The basic model in this conjoint analysis is:

$$y = b_1(\text{price}) + b_2(\text{lunch/dinner pricingweekday/weekend pricing})$$
$$+ b_3(\text{weekday/weekend pricing})$$
$$+ b_4(\text{table location pricingrestricted coupon pricing})$$
$$+ b_5(\text{restricted coupon pricing}) + b_6(\text{meal period pricing})$$
$$+ b_7(\text{reservation and seating policy pricing})\text{constant} + \varepsilon,$$

where:

y = a respondent's preference for the product concept;

b_i = the beta weight utilities of the features;

constant = the regression constant; and

ε = an error term.

The respondents' ratings, from the most to least preferred rate fence set, for the various customer values form the dependent variable. The measures of each customer value (the attribute levels) are the independent (predictor) variables. The estimated betas associated with the independent variables are the utilities (preference scores) of the levels. The foregoing equation represents a regression model generated from the results of conjoint analysis, which could be used for future study. This study, however, only focuses on the statistical analysis of two main conjoint analysis results: utility scores and importance values (Levy, 1995).

The utility of an attribute refers to the value that consumers place on that attribute. A low degree of utility indicates less value, and a high degree indicates more value. The importance of an attribute can be calculated as the difference between the lowest and highest utilities across attribute levels, and can be used to generate the preferred combination of rate fences. According to Toombs and Bailey (1995), conjoint analysis can be performed to identify the trade-offs that customers are likely to make in choosing a product/service and the price they are willing to pay for it. Nees and Gerhardy (1994) further suggest that the conjoint analysis method outperforms other methods by helping to identify consumer segments with similar preferences.

3.3 The questionnaire

A survey questionnaire was used as the data collection instrument in this study. The target population was mainland Chinese visitors to Hong Kong aged 18 and above, who constitute one

of the most important customer segments for restaurant operators in Hong Kong. Eligible respondents were recruited by a Chinese survey company in April 2016. According to Orme (1998, p. 65), "sample sizes for conjoint studies generally range from about 150 to 1,200 respondents." Finally, 357 valid questionnaires were collected.

The questionnaire was divided into two sections. The first covered sociodemographic information and dining-behavior characteristics. The sociodemographic information collected consisted of respondents' age, educational background, gender, marital status, occupation, and average monthly household income. Dining-behavior characteristics included their purpose for dining out (Koo, Tao, & Yeung, 1999), frequency of dining out (Kimes & Wirtz, 2003), and perceived dining out experience. The second section comprised the restaurant rate fences generated by SPSS conjoint analysis. Each set of attribute levels in the orthogonal design represented a different version of the item under study and was presented to the respondents in the form of an individual item profile. This helped them to focus solely on the item currently under evaluation. The stimuli were standardized to ensure that the profiles were similar in physical appearance but had different combinations of features. The design was generated by the SPSS "generate orthogonal design" procedure, which produced a set of item profiles in a ready-to-use format. The respondents were presented with 20 cards including the 4 holdout cards and asked to rank the combinations presented from the most ("1") to least ("20") preferred rate fence set. The questionnaire was prepared in English and then translated into simplified Chinese. The back-translation method was used to ensure content validity (Behling & Law, 2000; Wilson, 2010). Respondents were asked screening questions to ensure that they had traveled to Hong Kong at least three times within the past three months and had stayed in Hong Kong for more than three days.

4 Findings

4.1 Sociodemographic profile and restaurant behavior

The respondents' sociodemographic profile and restaurant behavior characteristics are presented in Table 4. Of the 357 respondents from 27 provinces in China, the majority were women (56.9% versus 43.1%), and most (45.4%) were between the ages of 26 to 35, followed by the 36-45 (18.5%), 25 and below (3.4%), and 46-55 (2.8%) age groups. A large majority (84.0%) of the respondents were college or university graduates, and most reported monthly household

income of RMB20,000 or less (35.5%) or between RMB20,001 and RMB40,000 (41.5%). Around 98% of the respondents were employed, with the other roughly 2% comprising housewives, retirees, and students.

*** Please insert Table 4 about here***

Most of the respondents typically went to restaurants for lunch (38.4%) and dinner (41.2%), followed by breakfast (11.2%) and tea time (9.3%). Around 38% stated that they dined in restaurants more than three times a week, followed by twice a week (27.7%), three times a week (21.6%), and once a week (12.9%). Most of the respondents said they usually went to restaurants with friends (37.5%), family (30.8%), or colleagues (26.1%). When asked about the average party size when they dined out, 36.4% reported usually visiting restaurants with four to six family members or friends, and around 50% with four to six colleagues. Over 90% of the respondents expressed a preference for a table with a view. Finally, most said that they preferred to book restaurant tables online (89.1%) and to review restaurant ratings before choosing a restaurant (94.7%). Respondents were presented with the following scenario prior to taking 20 different combination of 5 rate fences and the prices:

Imagine yourself in the following situation:

You are going to a dim sum restaurant in Hong Kong with a friend. When you make the reservation, you are informed that the restaurant prices vary due to certain restrictions. These restrictions include lunch/dinner pricing, weekday/weekend pricing, table location pricing, restricted coupon pricing, restricted meal duration and reservation and seating policy. In this study we are asking you rank different combinations of rate restrictions attached to five-item dim sum menu price.

Five-item dim sum menu includes steamed prawn dumplings, steamed minced pork dumplings with crab roe, steamed chicken feet with black bean sauce, steamed buns with egg yolk paste and steamed flour rolls with barbecued pork. Five-item dim sum menu can be priced at HKD 92 (76 RMB), HKD 133 (110 RMB) and HKD 190 (156 RMB).

Please rank 20 combinations from the most preferred to the least preferred. Please rank the most preferred combination 1, the second most preferred combination 2, the third most preferred combination 3, and so on.

Six rate fences are selected in this study:

- Lunch/dinner pricing: the price of dim sum meal you order is different during lunch and

dinner.

- Weekday/weekend pricing: the price of dim sum meal you order is different during weekdays and weekends.

- Table location pricing: the price of dim sum meal you order is different when your table has a view of Victoria Harbor.

- Restricted coupon pricing: 20% off coupon, 15% off coupon, no coupon. Customers can use this coupon for their next meal within one month.

- Restricted meal duration: your meal should be completed within 90 minutes, 120 minutes or there is no specified meal period

- Reservation and seating policy: if you booked this restaurant, your table will be kept for 10 minutes, 15 minutes or 20 minutes. If you do not arrive to the restaurant within this time limit, your table reservation will be released.

4.2 Conjoint analysis results

The conjoint module of SPSS 20.0 was used to analyze the data. The relative importance of the various restaurant rate fences was calculated from the partial utility scores extracted from conjoint analysis. These attribute importance values measure how important each rate fence is to a customer's overall preference. Utility scores were calculated to determine the preferred restaurant rate fences, as perceived by the restaurant customers surveyed, and partial utility scores were calculated to investigate the differences among different sociodemographic groups and customers with different behavioral characteristics.

Table 5 presents the partial utility scores for each specific level of the seven attributes, revealing the overall preferences of the respondents. The strongest preferences were attached to a price of RMB110, dinner for lunch/dinner pricing, weekend for weekday/weekend pricing, a harbor view for table location pricing, a 20%-off coupon for restricted coupon pricing, no specified meal period for meal period, and 20 minutes for reservation and seating policy.

*** Please insert Table 5 about here***

Table 5 also reports the average importance scores for the seven attributes tested, with price obtaining the highest score (20.58%), followed by restricted coupon pricing (17.67%), meal period (17.19%), reservation and seating policy (14.49%), table location pricing (12.25%), weekday/weekend pricing (9.57%), and lunch/dinner pricing (8.21%). These findings suggest

13

that price, restricted coupon pricing, and meal period are more important to mainland Chinese diners than reservation and seating policy or table location, weekday/weekend, or lunch/dinner pricing.

Tables 6 and 7 display the relative importance scores of each attribute based on respondents' sociodemographic profile and dining behavior, respectively. Price has the highest such score, and lunch/dinner pricing the lowest on average, in the most of groups. Single respondents afforded meal period the greatest importance, whereas price was the top consideration for their married counterparts. Younger respondents (below 26, 26-35, and 36-45) were more price-sensitive than their older counterparts, whereas older respondents (aged 46 or above) assigned the highest degree of importance to restricted coupon pricing.

<div align="center">*** Please insert Tables 6 and 7 about here***</div>

As can also be seen from the two tables, the respondents who typically went to restaurants for lunch or dinner assigned the greatest importance to price, whereas breakfast and tea time diners perceived the meal period as the most important attribute. Frequent restaurant visitors who went to a restaurant more than three times a week were also more concerned with meal period than price. Respondents who went to restaurants with seven or more family members/friends were particularly concerned with the meal period, whereas those whose average party size was two to three or four to six attached the highest degree of importance to price. Among respondents who usually visited restaurants on weekdays, reservation and seating policy received the highest importance value, whereas price was the top criterion for weekend diners. Finally, the respondents who reported reviewing ratings online before choosing a restaurant considered price to be the most important attribute, whereas those who said they did not do so chose restricted coupon pricing as the most important attribute.

4.3 Inferential statistics

Tests were also performed to determine the significant differences among the importance values that respondents attached to price, lunch/dinner pricing, weekday/weekend pricing, table location pricing, restricted coupon pricing, meal period, and reservation and seating policy based on their sociodemographic profile and restaurant behavior. To choose the most appropriate techniques for these significant difference tests, a series of Kolmogorov-Smirnov tests were run to determine whether the importance values were normally distributed based on respondents'

sociodemographic profile and restaurant behavior. The values of all attributes were found not to be normally distributed. Therefore, non-parametric techniques, including the Kruskal-Wallis test and Mann-Whitney U test, which are considered non-parametric alternatives to one-way analysis of variance and independent sample t-tests (Green, Salkind, & Jones, 1996), were adopted to identify the significant differences in attribute importance across respondents with different sociodemographic profiles and restaurant behavior characteristics. The results are reported in Table 9.

*** Please insert Table 9 about here***

Based on respondents' sociodemographic profiles, two of the six groups were found to have significant differences in attribute importance. For example, respondents belonging to the 35 or below age group (13.04%) assigned greater importance to table location pricing than did respondents in the 36-55 age group (9.34%). Further, respondents who had completed graduate level or above education placed greater value on a restaurant's meal period (20.78%), relative to 16.60% for those with college level or below education.

When testing the statistical results based on respondents' restaurant behavior, the frequent restaurant visitors (more than three times a week) were found to attach less importance to price (17.29%) than those who went to a restaurant once (24.72%) or twice a week (22.81%). Respondents who reported reviewing online restaurant ratings before choosing a restaurant placed greater emphasis on price (20.92%) than those who said they did not do so (14.65%). Respondents who usually went to restaurants on both weekdays and the weekend assigned a lower importance value to weekday/weekend pricing (8.87%) relative to their weekend-only counterparts (11.47%). Those who said they did not book tables online assigned an 8.14% importance value to weekday/weekend pricing, related to a value of 9.75% for their counterparts who preferred to book. With regard to average party size when dining out, respondents from the group who visited restaurants with seven or more friends or family members attached a much lower importance value to table location pricing (7.47%) than the groups who preferred to dine with two (12.31%), three (13.29%), or between four and six people (13.75%). Diners who visited restaurants both on the weekends and during the week placed a higher value on table location pricing (13.17%) than their weekend-alone counterparts (9.57%). It was also found that respondents who preferred tables with a view were concerned with restricted coupon pricing. Weekend restaurant customers also paid attention to such pricing (20.27%) relative to those who

dined out on both weekdays and weekends (16.83%). Frequent restaurant customers (three times a week/more than three times a week) afforded more importance to meal period (15.73%/19.52%) than those who reported that they typically went to restaurants once a week/twice a week (13.13%/15.73%). Respondents who said they preferred visiting restaurants with family members or friends in parties of seven or more people placed greater value on meal period (23.11%) compared with those whose dining parties generally comprised two (14.76%), three (16.07%), or four to six people (17.22%). Frequent restaurant customers who dined out more than three times a week assigned a higher importance value to reservation and seating policy (16.23%) than infrequent restaurant customers (once and twice a week – 12.12% and 13.70%). Weekday restaurant customers also placed higher emphasis on reservation and seating policy (16.87%) than their weekend counterparts (13.55%).

5   Discussion, conclusion and recommendations for future research

The aim of this study was to identify the restaurant rate fences preferred by mainland Chinese visitors to Hong Kong. In addition to providing support for the use of rate fences in the restaurant industry, the study's findings also have important practical implications for restaurant operators looking to design specific restaurant rate fence combinations that cater to particular customers, thereby increasing revenue. This study made the first attempt to examine the perceived preferences for various restaurant rates and restrictions among Chinese tourists when they dine out.

Our results reveal that this population of restaurant customers considered price, restricted coupon pricing, and meal period as the three most important attributes in their decision-making process. They also reveal that these restaurant customers preferred a mid-level price, mid-level restricted coupons, no specified meal period, a generous reservation and seating policy, a table location with a view, visiting restaurant on the weekend, and going out for dinner. The study also found that Chinese restaurant customers had different perceptions of various restaurant rate fences depending on their sociodemographic profile and dinning behavior. For instance, married customers and infrequent customers (three times a week or less) attached the highest degree of importance to price, whereas single customers and frequent customers (more than three times a week) preferred lengthy meal periods. Also, those who liked to dine out for breakfast and at tea time placed higher preference values on meal period, whereas their counterparts who preferred

eating out for lunch and dinner were more concerned with price. These findings will help restaurant operators to set appropriate pricing policies and rate fences for different customer segments.

There are several important implications of this research. Although revenue management cannot be implemented in the restaurant industry to the extent that hotel industry can implement it, there is still room for restaurant operators to incorporate revenue management into their practice. One way to do that, as shown in this study, is to utilize restaurant rate restrictions in a strategic way to create value to the customers while protecting the interest of the restaurant. Our study showed that lunch/dinner pricing and weekday/weekend pricing are not perceived as very important compared to price, restricted coupon pricing, and meal period. One plausible explanation for this finding is that the restaurant customers are already very familiar with these restaurant policies. Therefore, they are more likely to be okay with these pricing policies.

Table location pricing is a relatively controversial one as customers found this policy unfair in Kimes & Wirtz's (2003) research. Thirteen years passed from that research and their research was conducted in a different geographical setting. Interestingly, customer didn't attach great importance to table location pricing in comparison to price, restricted coupon pricing, and meal period. In Hong Kong, harbor view restaurants and tables with the Harbour view in the restaurants are highly demanded and booked well in advance. However, to our knowledge, there are no restaurants in Hong Kong implementing table location pricing at this time.

Restricted coupon pricing and meal period restriction are the most important restrictions following price. Restaurant operators should ensure that they are not upsetting the customers by imposing too strict rules as they might come across as unfair to customers. In the design of our study, we were rather generous with the meal periods. It is not uncommon for restaurants to use 60 minutes meal period policy during lunch or busy hours. It is likely that the importance of this attribute would increase if we included a 60 minutes meal period policy. It might however be a good idea for restauranteurs to use restricted coupon pricing in conjunction with meal period restriction.

Another interesting finding based on the partial utility scores is that respondents do not prefer 15% off coupon and no coupon. However, their utility is highly positive for 20% off coupon. It is understandable to have negative utility for no coupon. For some reason, 15% off coupon is also not perceived positive by the respondents. One plausible explanation for this

finding is that previous research (Della Bitta, Monroe, McGinnis, 1981) has shown that at least 15% of price discount level should be offered to make consumers purchase services or products. It might be that the respondents were not convinced with 15% coupon therefore the utility is negative. However, 20% discount exceeds the 15% threshold and therefore perceived positive by the respondents.

Setting reservation and seating policies is generally popular for restaurants with high demand. In the presence of other restrictions and price, respondents attach around 15% importance to this restriction which is comparably less than the importance values for restricted coupon pricing and meal period restriction. It is recommended that restaurants use this policy as it is in the interest of the restaurant as the restaurant is restricted with limited capacity of seats. In the context of restaurant revenue management, there are very few studies related to table location pricing (Kimes & Wirtz, (2003). Therefore, more research should be conducted to understand customer perspectives better on this policy. In this research, respondents attach 12% importance to this restriction. It is well established in the revenue management literature is that the management meal duration is very critical to the successful implementation of revenue management in the restaurant industry. Meal period restriction together with the reservation and seating policies impacts meal duration to a great extent. Therefore, it is important for restaurant operators to set these policies carefully.

It is time for restaurants to start implementing these restrictions strategically to create value to their customers and at the same time to protect their own interest. This notion is similar to the value-based pricing concept that is widely implemented in the hotel industry. Restaurant operators should design restrictions that are in the interest of restaurants and customers, under the joint influence of price and restrictions.

This study had several limitations, which should be noted. First, the sample comprised respondents to a survey conducted online by an independent survey company, which resulted in a concentration of respondents in the 26-35 and 36-45 age groups. Second, the sample included mainland Chinese travelers who had visited Hong Kong at least three times within the last three months and who had stayed in Hong Kong for more than 3 days. Future studies could be extended to local Hong Kong residents, who are also important customers for restaurant operators in Hong Kong, and explore their preferences for restaurant rate fences.

REFERENCES

About.com. (2012, August 24). Top 5 Hong Kong dim sum restaurants. Retrieved from www.gohongkong.about.com: http://gohongkong.about.com/od/chinesecuisine/tp/hongkongdimsum.htm'

Behling, O., & Law, K. S. (2000). Translating questionnaires and other research instruments: Problems and solutions. Thousand Oaks, CA: Sage Publications.

Beldona, S., & Namasivayam, K. (2006). Gender and demand-based pricing: Differences in perceived (un)fairness and repatronage intentions. *Journal of Hospitality & Leisure Marketing, 14*(4), 89-107.

Bitta, A. J. D., & Monroe, K. B. (1981). A multivariate analysis of the perception of value from retail price advertisements. In K. B. Monroe (Ed.), *NA – Advances in consumer research* (Vol. 8, pp. 161-165). Ann Arbor, MI: Association for Consumer Research.

Campbell, M. C. (1999). Perceptions of price unfairness: Antecedents and consequences. *Journal of Marketing Research, 36*, 187-199.

CNNGo.com. (2012, August 24). The best Hong Kong dim sum. Retrieved fromwww.CNNGo.com: http://www.cnngo.com/hong-kong/eat/best-hong-kong-dim-sumrestaurants-674709

Della Bitta, A.J. and Monroe, K.B. (1980), "A multivariate analysis of the perception of value from retail price advertising", Advances in Consumer Research, 8, 161-165.

Green, S. B., Salkind, N. J., & Jones, T. M. (1996). *Using SPSS for Windows: Analyzing and understanding data*. Upper Saddle River, NJ: Prentice Hall PTR.

Guillet, B. D., Law, R., & Xiao, Q. (2013). Rate fences in hotel revenue management and their applications to Chinese leisure travelers: A fractional factorial design approach. *Cornell Hospitality Quarterly*, doi: 1938965513507497.

Guillet, B. D., & Xu, Y. E. (2013). Chinese leisure travelers' preferences of rate fences in the airline industry. *Journal of Hospitality Marketing & Management, 22*(3), 333-348.

Gupta, S., & Cooper, L. G. (1992). The discounting of discounts and promotion thresholds. *Journal of Consumer Research, 19*(3), 401-411.

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.

Hong Kong Tourism Board (2015). A statistical review of Hong Kong tourism 2015. Retrieved from http://securepartnernet.hktb.com/filemanager/intranet/dept_info/private_20 /paper/Stat-Review/StatReview2015/Statistical_Review_2015_0.pdf

Kahneman, D., Knetsch, J. L., & Thaler, R. (1986). Fairness as a constraint on profit seeking: Entitlements in the market. *The American Economic Review, 76*(4), 728-741.

Kaufmann, P. J., Ortmeyer, G., & Smith, N. C. (1991). Fairness in consumer pricing. *Journal of Consumer Policy, 14*(2), 117-140.

Kimes, S. E. (1994). Perceived fairness of yield management. *Cornell Hotel and Restaurant Administration Quarterly, 35*(1), 22-29.

Kimes, S. E. (1999). Implementing restaurant revenue management: A five-step approach. *Cornell Hotel and Restaurant Administration Quarterly, 40*(3), 16.

Kimes, S. E. (2004). Restaurant revenue management implementation at Chevys Arrowhead. *Cornell Hotel and Restaurant Administration Quarterly, 45*(1), 52-67.

Kimes, S. E., Barrash, D. I., & Alexander, J. E. (1999). Developing a restaurant revenue-management strategy. *Cornell Hotel and Restaurant Administration Quarterly, 40*(5), 18-29.

Kimes, S. E., Chase, R. B., Choi, S., Lee, P. Y., & Ngonzi, E. N. (1998). Restaurant revenue management applying yield management to the restaurant industry. *Cornell Hotel and Restaurant Administration Quarterly, 39*(3), 32-39.

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.

Kimes, S. E. (2004). Restaurant revenue management implementation at Chevy's arrowhead. *Cornell Hotel and Restaurant Administration Quarterly*, *45*(1), 52-67.

Kucukusta, D., & Guillet, B. D. (2014). Measuring spa-goers' preferences: A conjoint analysis approach. *International Journal of Hospitality Management, 41*, 115-124.

Lancaster, K. (1971). *Consumer demand: A new approach*. New York: Columbia University Press.

Law, R., To, T., & Goh, C. (2008). How do mainland Chinese travelers choose restaurants in Hong Kong?: An exploratory study of individual visit scheme travelers and packaged travelers. *International Journal of Hospitality Management, 27*(3), 346-354.

Liu, W., Guillet, B. D., Xiao, Q., & Law, R. (2014). Globalization or localization of consumer preferences: The case of hotel room booking. *Tourism Management, 41*, 148-157.

Louviere, J. J. (1988). *Analyzing decision making: Metric conjoint analysis*. Newbury Park, CA: Sage.

Mauri, A. G. (2007). Yield management and perceptions of fairness in the hotel business. *International Review of Economics, 54*(2), 284-293.

Openrice.com. (2012, August 24). Striving as Hong Kong's most popular dining guide. Retrieved from www.openrice.com: http://www.openrice.com/info/Nielsen_2012_eng/Web/Nielsen_index.html?source= whatsnews&tc=right2

Sill, B., & Decker, R. (1999). Applying capacity-management science. *Cornell Hotel and Restaurant Administration Quarterly, 40*(3), 22-20.

Sill, B. T. (1991). Capacity management: Making your service delivery more productive. *Cornell Hotel and Restaurant Administration Quarterly, 31*(4), 76-87.

Suite101.com. (2012, August 30). Eating out in Hong Kong, Cantonese, fusion food: How to choose from the Asian food capital's eleven thousand eateries. Retrieved from www.suite101.com: http://suite101.com/article/eating-out-in-hong-kong-cantonesefusion -food-a126822

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science, 4*(3), 199-214.

Urbany, J. E., Madden, T. J., & Dickson, P. R. (1989). All's not fair in pricing: An initial look at the dual entitlement principle. *Marketing Letters, 1*(1), 17-25.

Wilson, J. (2010). Essentials of business research: A guide to doing your research project. London: Sage Publications.

Wirtz, J., & Kimes, S. E. (2007). The moderating role of familiarity in fairness perceptions of revenue management pricing. *Journal of Service Research, 9*(3), 229-240.

Table 1 Types of restaurant rate fences

Physical rate fences	• Table location
	• Party size
	• Menu type
	• Absence or presence of certain amenities
Intangible rate fences	• Group membership or affiliation
	• Time of day or week
	• Duration of use
	• When reservation booked
	• Walk-in versus reservation
	• Type of reservation (guaranteed or not)

Source: Kimes, Chase, Choi, Lee, & Ngonzi (1998).

Table 2 Attributes and attribute levels

Price (RMB)	Lunch/ dinner pricing	Weekday/ weekend pricing	Table location pricing	Restricted coupon pricing	Meal period	Reservation & seating policy
76	lunch	weekday	No harbor view	No coupon	No specified meal period	10 minutes
110	dinner	weekend	Harbor view	15% off coupon	90 minutes	15 minutes
156				20% off coupon	120 minutes	20 minutes

Table 3 5-item dim sum menu prices in Hong Kong restaurants

Dishes	Average Price		1st Quartile		2nd Quartile		3rd Quartile	
	HKD	RMB	HKD	RMB	HKD	RMB	HKD	RMB
Steamed prawn dumplings	34	28	21	17	28	23	42	35
Steamed minced pork dumplings with crab roe	32	26	19	16	28	23	40	33
Steamed chicken feet with black bean sauce	28	23	16	13	24	20	38	31
Steamed buns with egg yolk paste	28	23	17	14	25	21	32	26
Steamed flour rolls with barbecued pork	30	25	19	16	28	23	38	31
Total	152	124	92	76	133	110	190	156

Note: The prices were converted from Hong Kong dollars (HKD) to RMB using the Google Finance currency converter.

Table 4 Respondents' sociodemographic profiles and restaurant behavior (N = 357)

	%		%
Gender		When you go to restaurants, are you usually	
Male	43.1	Alone	5.6
Female	56.9	With friends	37.5
Marital status		With family	30.8
Single	7.6	With colleagues	26.1
Married	92.4	Party size with friends or family	
Age		Two	15.0
25 or below	3.4	Three	35.6
26-35	45.4	4-6	36.4
36-45	18.5	7 or above	13.0
46-55	2.8	Party size with colleagues	
Education level		3 or below	36.7
Secondary/High school	1.7	4-6	48.7
College/University	84.0	7 or above	14.6
Graduate level or higher	14.3	Table with view	
Income		Yes	91.6
Below 20,000	35.5	No	8.4
20,001-40,000	41.5	Weekdays or weekends	
40,001 and above	13.0	Weekdays	9.5
Occupation		Weekends	17.6
Working	98.3	Both	72.8
Non-working	1.7	Reservation	
When do you typically go to a restaurant?		Book	30.8
Breakfast	11.2	Walk-in	7.6
Lunch	38.4	Both	61.6
Tea time	9.3	Book online	
Dinner	41.2	Yes	89.1
Frequency		No	10.9
Once a week	12.9	Do you review restaurant ratings online before choosing a restaurant?	
Twice a week	27.7	Yes	94.7
Three times a week	21.6	No	5.3
More than three times a week	37.8		

Table 5 Partial utility scores and attribute importance values

Attributes	Levels	Utility	Std. error	Attribute importance values (%)
Price	76	.316	.313	20.589
	110	**.424**	.361	
	156	-.740	.361	
Lunch/dinner pricing	Lunch	-.230	.234	8.217
	Dinner	**.230**	.234	
Weekday/weekend pricing	Weekday	-.554	.234	9.575
	Weekend	**.554**	.234	
Table location pricing	No harbor view	-.884	.234	12.251
	Harbor view	**.884**	.234	
Restricted coupon pricing	No coupon	-.580	.378	17.671
	15% off coupon	-.472	.313	
	20% off coupon	**1.052**	.365	
Meal period	No specified meal period	**.531**	.373	17.198
	90minutes	-.501	.340	
	120minutes	-.030	.443	
Reservation & seating policy	10minutes	-.184	.313	14.499
	15minutes	-.154	.361	
	20minutes	**.338**	.361	
Constant		8.359	.288	

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

Table 6 Average importance based on sociodemographic profiles

	Price	Lunch/dinner pricing	Weekday/ weekend pricing	Table location pricing	Restricted coupon pricing	Meal period	Reservation & seating policy
Gender							
Male	19.75	8.00	9.71	12.45	18.87	17.00	14.22
Female	21.23	8.38	9.47	12.10	16.76	17.35	14.71
Marital status							
Single	18.39	7.04	11.67	11.94	17.98	19.00	13.99
Married	20.77	8.31	9.40	12.28	17.65	17.05	14.54
Age							
Below 26	19.44	10.61	11.84	11.31	15.15	17.95	13.70
26-35	20.83	7.85	9.46	13.12	17.61	17.09	14.04
36-45	20.04	9.18	9.71	9.15	17.83	17.56	16.54
46-55	19.03	8.82	9.07	10.63	21.23	16.94	14.29
Education level							
Secondary/High school	13.03	7.45	9.57	16.74	20.72	18.86	13.63
College/University	20.76	8.29	9.74	12.37	17.78	16.56	14.50
Graduate level or higher	20.47	7.90	8.58	11.00	16.65	20.78	14.62
Income							
Below 20,000	23.02	7.90	9.34	13.07	17.02	16.15	13.50
20,001-40,000	19.29	8.43	9.45	11.77	18.11	17.81	15.13
40,000 and above	19.04	8.23	10.72	11.92	17.72	17.65	14.72
Occupation							
Working	20.65	8.18	9.45	12.26	17.73	17.27	14.46
Non-working	17.10	10.69	16.93	11.84	14.07	12.74	16.63

Table 7 Average importance values based on dining behavior

	Price	Lunch/dinner pricing	Weekday/ weekend pricing	Table location pricing	Restricted coupon pricing	Meal period	Reservation & seating policy
Time to go to restaurant							
Breakfast	18.13	9.37	8.95	11.25	17.49	18.36	16.45
Lunch	20.45	7.67	9.76	12.03	18.00	17.25	14.85
Tea time	18.81	7.34	11.07	12.87	17.65	18.84	13.41
Dinner	20.73	8.13	9.45	12.69	17.65	17.01	14.35
Frequency							
Once a week	24.72	9.09	11.88	12.27	16.80	13.13	12.12
Twice a week	22.81	7.68	9.02	13.47	17.59	15.73	13.70
Three times a week	21.04	6.96	9.11	13.83	17.71	17.44	13.91
More than three times a week	17.29	9.03	9.46	10.45	18.01	19.52	16.23
When you go to restaurants, are you usually							
Alone	23.30	8.80	9.04	13.02	15.31	16.05	14.49
With friends	20.32	8.25	9.58	12.29	17.67	17.09	14.79
With family	21.32	8.14	9.34	12.67	17.36	16.88	14.30
With colleagues	19.85	8.19	9.14	12.50	17.47	17.93	14.91
Party size with friends or family							
Two	21.57	7.20	9.71	13.75	17.90	14.76	15.11
Three	20.71	8.22	10.05	13.29	17.71	16.08	13.95
4-6	21.47	8.06	8.86	12.31	17.95	17.22	14.13
7 or above	16.60	9.87	10.13	7.47	16.51	23.11	16.32
Party size with colleagues							
3 or below	19.54	8.68	9.77	11.84	18.10	17.25	14.84
4-6	20.06	7.92	9.69	12.70	17.84	17.20	14.59
7 or above	25.00	8.05	8.71	11.80	16.03	17.08	13.33
Table with view							
Yes	20.12	8.01	9.61	12.45	17.96	17.37	14.48
No	25.74	10.43	9.21	10.11	14.48	15.32	14.72
Weekdays or weekends							
Weekdays	16.52	8.61	11.78	10.10	19.29	16.84	16.87
Weekends	22.02	8.31	11.47	9.57	20.27	14.81	13.55
Both	20.77	8.14	8.83	13.18	16.83	17.82	14.42
Reservation							
Book	21.36	8.02	9.83	12.20	18.31	15.97	14.31
Walk-in	17.34	7.84	10.37	10.37	20.17	17.39	16.52
Both	20.60	8.36	9.35	12.51	17.05	17.79	14.34
Book online							
Yes	20.59	8.26	9.75	12.21	17.56	17.12	14.51
No	20.57	7.85	8.14	12.58	18.57	17.85	14.44
Do you review restaurant ratings online before choosing a restaurant?							
Yes	20.92	8.04	9.71	12.26	17.50	17.09	14.47
No	14.65	11.42	7.20	12.06	20.65	19.06	14.96

Table 8 Kruskal-Wallis and Mann-Whitney U test findings based on sociodemographic profiles and dining behavior

Sociodemographic profile and dining behavior	Price	Lunch/dinner pricing	Weekday/weekend pricing	Table location pricing	Restricted coupon pricing	Meal period	Reservation & seating policy
Age							
Below 35				13.04			
36-55				9.34			
Education level							
College/University or below						16.60	
Graduate level or higher						20.78	
Frequency							
Once a week	24.72					13.13	12.12
Twice a week	22.81					15.73	13.70
Three times a week						17.44	13.91
More than three times a week	17.29					19.52	16.24
Party size with friends or family							
Two				13.75		14.76	
Three				13.29		16.08	
4-6				12.31		17.22	
7 or above				7.47		23.11	
Table with view							
Yes					17.96		
No					14.48		
Weekday or weekend							
Weekday							16.87
Weekend			11.45	9.57	20.27		13.55
Both			8.83	13.18	16.83		
Book online							
Yes			9.75				
No			8.14				
Do you review restaurant ratings online before choosing a restaurant?							
Yes	20.92						
No	14.65						