

# Has Revenue Management Become Acceptable?

## Findings From an International Study on the Perceived Fairness of Rate Fences

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*Demand-based pricing is underused in many service industries, because customers are believed to perceive such pricing as unfair. Fencing can be highly effective in improving the perceived fairness of demand-based pricing. In this study, five fences were explored in a restaurant context across three countries (Singapore, Sweden, and the United States). Demand-based pricing in the form of coupons (two for the price of one), 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 seen as somewhat unfair with potential negative consumer reactions to this practice. Furthermore, framing demand-based pricing as discounts improved perceived fairness. The findings were largely consistent for the three countries. Specifically, framing demand-based pricing as discounts or gains showed no country-specific effect.*

**Keywords:** *revenue management; pricing; perceived fairness; international; restaurants*

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Revenue management, also known as yield management, has been widely adopted in the airline, hotel, and rental car industries (Carroll and Grimes 1995; Hanks, Noland, and Cross 1992; Smith, Leimkuhler, and Darrow 1992) but has only recently gained attention in other industries (Kimes 2000; Kimes et al. 1998). Companies using revenue management have reported revenue increases of 2% to 5% (Hanks, Noland, and Cross 1992; Smith, Leimkuhler, and Darrow 1992).

Revenue management is the application of information systems and pricing strategies to allocate the right capacity to the right customer at the right price at the right time. The determination of "right" entails achieving both the most contribution possible for the company, while also delivering the greatest value or utility to the customer. In practice, revenue management has meant setting prices according to predicted demand levels so that price-sensitive customers who are willing to purchase at off-peak times can do so at favorable prices, whereas price-insensitive customers who want to consume at peak times will be able to do so.

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The application of revenue management has been most effective when applied to operations that have relatively fixed capacity, demand that is variable and uncertain, perishable inventory, a high fixed cost structure, and varying customer price sensitivity.

Many managers have been reluctant to adopt revenue management practices because of possible customer dissatisfaction. They may well find support for their fears in the fairness literature, which has shown that customers will refuse to patronize companies perceived as unfair. In this research, we studied customer reaction to various demand-based pricing approaches in one particular service industry, the restaurant industry, in three different countries. Furthermore, we explored whether framing these revenue management practices as discounts rather than surcharges would significantly enhance their perceived fairness and make them more acceptable to customers. The intent of our research was to better understand how customers react to demand-based pricing strategies.

## PROBLEM BACKGROUND

We will first discuss revenue management, then present an overview of the fairness literature and discuss how framing of price differences can affect customer reaction.

### Revenue Management

Revenue management consists of two strategic levers: duration control and demand-based pricing (Kimes and Chase 1998; Kimes et al. 1998). Different industries are subject to different combinations of duration control and variable pricing (see Figure 1; Kimes and Chase 1998). Firms in industries traditionally associated with revenue management (hotels, airlines, car-rental firms, and cruise lines) are able to apply variable pricing for a service that has a specified or predictable duration (Quadrant 2). Note that not all firms in Quadrant 2 industries practice revenue management or practice revenue management well; the schema simply denotes that industries in this quadrant would be best suited for revenue management practices. Movie theaters, performing-arts centers, and sports stadiums usually charge a fixed price for a service of predictable duration (Quadrant 1), whereas restaurants and golf courses generally charge a fixed price but face a relatively unpredictable duration of customer use (Quadrant 3). Many health care businesses charge variable prices (e.g., depending on the type of insurance) but do not know the length of patient use, even though some may try to control that duration (Quadrant 4).

Successful revenue management applications are generally found in Quadrant 2 industries, because they can

manage both capacity and price. To obtain the benefits associated with revenue management, non-Quadrant 2 industries should attempt to move to Quadrant 2 by deploying the appropriate strategic levers. For example, movie theaters (a Quadrant 1 industry) should concentrate on developing variable pricing, whereas restaurants (a Quadrant 3 industry) should concentrate both on controlling customer duration and developing variable pricing. Even companies that are in Quadrant 2 can improve their revenue management by increasing their control of duration and enhancing their use of variable pricing.

Duration control can be achieved through either internal (not involving customers) or external means (involving customers). Internal duration control methods include regulating and redesigning the service delivery system (i.e., a restaurant designing its service delivery system for enhanced speed and customer turnover), forecasting customer arrivals (i.e., a hotel forecasting the number of customers who will arrive on a certain day for a given length of stay), and implementing inventory controls (i.e., length of stay controls or overbooking). External methods include booking fees or guarantees (i.e., airline and hotel reservations are guaranteed to a credit card), or restrictions on customer behavior (i.e., airline customers are not allowed to use "back-to-back" tickets, or hotel customers who check out late are charged an extra fee). Not surprisingly, most firms have chosen to manage duration internally, so as not to affect customer satisfaction.

Demand-based pricing has been shown to be successful in a number of industries and is based on the premise of price discrimination. Economists hold that different customer segments have different needs and price elasticities, and that prices and services should be designed to meet their needs. By offering multiple prices for essentially the same service, companies can increase revenue by reducing the consumer surplus. Even though demand-based pricing has proven to be successful, many firms are often reluctant to implement such practices because of the potential impact on customer satisfaction.

In this article, we chose to concentrate solely on customer reaction to revenue management pricing policies in one particular industry, the restaurant industry. Future research will address customer reaction to revenue management duration controls. The restaurant industry is one of the largest industries in the world and accounts for more than \$4 billion in annual sales in the United States alone. Like other Quadrant 3 industries, the restaurant industry has two strategic levers at its disposal: duration control and demand-based pricing. Restaurants have been willing to try managing duration by changing their service delivery process (Kimes, Barrash, and Alexander 1999; Sill 1991; Sill and Decker 1999) but have been unwilling to apply demand-based pricing because of fears of possible cus-

**FIGURE 1**  
**Typical Pricing and Duration Positioning**  
**of Selected Service Industries**

		Price	
		Fixed	Variable
Duration	Predictable	Quadrant 1:  Movies Stadiums/Arenas Function Space	Quadrant 2:  Hotel Rooms Airline Seats Rental Cars Cruise Lines
	Unpredictable	Quadrant 3:  Restaurants Golf Courses	Quadrant 4:  Continuing Care <b>Hospitals</b>

NOTE: This framework was adapted from Kimes and Chase (1998).

customer dissatisfaction. Although restaurants do use demand-based pricing by offering promotions such as happy hours and early bird specials, they have been slow to vary price by time of day, day of week, or table location. This is akin to other Quadrant 3 industries, such as golf courses and broadband Internet providers.

### Perceived Fairness of Demand-Based Pricing

Many service businesses are reluctant to implement demand-based pricing because of potential customer backlash. If customers believe that increased prices are not based on cost increases or changes in market conditions, they may view demand-based pricing as unfair (Kimes and Wirtz 2002a). Perceived fairness has been studied in a variety of industries (Campbell 1999a, 1999b; Kahneman, Knetch, and Thaler 1986; Kaufmann, Ortmeier, and Smith 1991; Kimes 1994; Kimes and Wirtz 2002b; Thaler 1985; Urbany, Madden, and Dickson 1989) and has been found to be a key factor to maintaining customer satisfaction, loyalty, and long-term profitability.

Consumers may view the demand-based pricing and price discrimination associated with revenue management as unfair for several reasons. For example, reference prices can affect customer reaction to demand-based pricing. If customers view peak-demand prices as higher than their reference price, or if they view regular prices as higher than their reference price due to frequent low-demand prices, then customers may view the prices charged as unfair. In addition, if customers believe that companies are not providing more value for the higher peak-demand price, their dual entitlement beliefs may be violated. In general, customers believe that they deserve a reasonable price and that firms are entitled to make a reasonable

profit. When this relationship becomes unbalanced in favor of the firm, the transaction may be viewed as unfair.

The principle of dual entitlement (Kahneman, Knetch, and Thaler 1986) posits two hypotheses: Customers believe that (a) if costs increase, price increases are fair, and (b) if costs do not increase, price increases are viewed as unfair. For example, if the utility costs for a hotel increase, customers will view room rate increases as fair, but if a hotel raises its room rates without a corresponding increase in costs, the price increases will be viewed as unfair. Based on the theory of dual entitlement, most price discrimination and demand-based pricing approaches would be seen as unfair.

### Reference Prices and Reference Transactions

Although customers are willing to accept market-clearing prices for purchases of automobiles, houses, and art, they tend to view market-clearing prices for most service purchases as unfair. In service transactions, the higher prices charged during busy periods may be seen as gouging and violate customer beliefs about dual entitlement, whereas the discounts available during low-demand periods may reduce the customer's reference price and make future purchases at the regular or premium rate seem unfair. This implies that charging a higher price during high-demand periods may be viewed as unfair. For example, Kahneman, Knetch, and Thaler (1986) found that consumers viewed a \$5 surcharge for a Saturday night dinner reservation at a popular restaurant to be unfair. Kahneman, Knetch, and Thaler (1986) concluded that "community standards of fairness effectively require the firm to absorb an opportunity cost in the presence of excess demand, by charging less than the clearing price" (p. 735).

Customers consider both the reference transaction (how they think the transaction should be conducted) and the reference price (how much they think the service should cost) when evaluating fairness. Both reference transactions and prices are based on consumer expectations, and reference prices are often used to evaluate the fairness of a transaction (Kahneman, Knetch, and Thaler 1986).

The question becomes one of how a firm can raise prices or charge different prices without risking customer perceptions of unfairness. Thaler (1985) suggested four possible approaches: (a) tie lower prices to restrictions, (b) offer additional perceived value for higher prices, (c) raise the reference price, and (d) obscure the reference price. Rate fences, in which certain rules are associated with different prices, can help a firm implement the first two approaches and will be discussed below. Offering a

“suggested” price and then having a series of discounted prices can help increase the reference price. For example, hotels do this with their “rack rate,” and airlines use “full fare.” If customers feel that they are receiving a discount, they are apt to view the price charged as fairer than in the presence of no apparent discount. Bundling the service with other products or services so that customers do not know the true price of each component of the package can obscure the reference price (Ng, Wirtz, and Lee 1999).

Reference prices and reference transactions can change over time. For example, practices originally thought of as unfair (such as hotel guests paying different prices for essentially the same room type), may attain the status of a reference transaction over time.

Psychological studies of adaptation suggest that any stable state of affairs tends to become accepted eventually, at least in the sense that alternatives to it no longer readily come to mind. Terms of exchange that are initially seen as unfair may in time acquire the status of a reference transaction. (Kahneman, Knetsch, and Thaler 1986, pp. 730-31)

Changes in the reference transaction can be readily seen in adoption of revenue management by various industries. Revenue management has been practiced in the airline industry for nearly 25 years and in the hotel industry for approximately 15 years. A study on the perceived fairness of revenue management in the airline and hotel industries found that consumers viewed identical revenue management practices in the airline industry as substantially fairer than in a hotel context (Kimes 1994). Interestingly, a follow-up study 8 years later found that customers found the fairness of the differential pricing policies to be similar for both industries (Kimes and Noone 2002). The authors concluded that the reference transaction for hotel services had changed over time because of the increased prevalence of revenue management practices in this industry. This finding is consistent with Kahneman, Knetsch, and Thaler’s (1986) conclusion that “a reference transaction provides a basis for fairness judgments because it is normal, not because it is just” (p. 731).

As revenue management has become more prevalent in other industries, consumers have been more accepting of the practices than when hotels and airlines began using revenue management practices in the 1980s. For example, golf courses have begun to use revenue management, and U.S. golfers view most golf course revenue management practices as relatively fair (Kimes and Wirtz 2002b). Another example is restaurants, which have started to apply revenue management practices (Kimes et al. 1998), and again, U.S. consumers increasingly accept differential pricing policies (Kimes and Wirtz 2002a).

## Rate Fences

Because many firms use revenue management pricing as well as a variety of price promotion approaches such as coupons, quantity discounts, and customer loyalty program rates, a wide range of prices for essentially the same service may exist. When a wide variety of prices are charged for essentially the same service, customers are likely to compare the price they paid with the prices that other customers pay (Bolton, Warlop, and Alba 2003; Chen, Monroe, and Lou 1998; Martins and Monroe 1994). Most fairness research has focused on the relationship between buyers and sellers and has not paid much attention to the relationship between customers (Bolton, Warlop, and Alba 2003). Equity theory has been suggested as a possible approach to the measurement of transactional fairness (Martins and Monroe 1994). Since customers will compare their prices with those paid by other customers as well as with prices they themselves had paid before, it is imperative that the reasons for the varying price levels are easily understood by all customers (Homans 1961; Lynn 1990). Service firms can use rate fences to achieve this.

Rate fences are rules that a company uses to determine who gets what price and can be used to help differentiate one transaction from another. Properly designed rate fences allow consumers to self-segment on the basis of willingness to pay and can help companies effectively target lower prices at customers who are willing to accept certain restrictions on their purchase and consumption experiences. Rate fences can help differentiate the prices offered to different market segments and can be physical or nonphysical in nature (Dolan and Simon 1996; Hanks, Noland, and Cross 1992). Examples of physical rate fences include view or seat location in a theater, or size and furnishings of a hotel room, whereas nonphysical rate fences include buyer (i.e., senior citizen discounts), consumption (i.e., quantity or frequency of purchase) and transaction (i.e., time of booking) characteristics. For a rate fence to be perceived as fair, it must be clear, logical, and difficult to circumvent (Bennett 1984).

Because consumers have experienced revenue management practices in a variety of industries (i.e., airline, hotel, rental car), they are likely to view similar practices in other industries as relatively acceptable, if a company can develop rate fences that consumers view as clear and understandable.

Perceptions of price fairness may be affected not only by the price paid but also by the rules that were used to set the prices (rate fences). A fair price is one that results from a fair pricing rule (Dickson and Kalapurakal 1994). Customers consider both procedural and distributive justice (Lind and Tyler 1988; Thibaut 1975) when evaluating the



fairness of a price or a transaction. With procedural justice, customers consider the fairness of different pricing rules, whereas with distributive justice, consumers evaluate the fairness of the outcomes achieved. For example, according to procedural justice theory, customers will evaluate the fairness of rate fences, so companies should strive to create rate fences that are clear, logical, and understandable. However, with distributive justice, consumers will evaluate the prices that different customers pay. Companies should ensure that the price associated with its various rate fences are viewed as acceptable and in line with the rate fences applied.

### Framing of Price Differences

We also wanted to evaluate the best way in which to present price differences. Price differences can either be presented as a premium or discount to regular prices. Prospect Theory considers price differences framed as a customer gain (i.e., discounts) as fairer than those framed as a customer loss (i.e., premiums or surcharges), even if the situations are economically equivalent (Chen, Monroe, and Lou 1998; Kahneman and Tversky 1979; Thaler 1985). For example, a restaurant may decide to charge higher prices for weekend dinners. They can either present the higher price as a premium over regular menu prices, or they can position the regular menu price as a discount from the higher weekend prices.

### Cultural Differences

Customers from different cultures and nationalities often have different service expectations (Donthu and Yoo 1998). For example, Lee and Ulgado (1997) found that American fast-food customers considered low prices to be of paramount importance when evaluating satisfaction, whereas Korean consumers were more concerned about service dimensions such as reliability and empathy. Also, Asians often see eating out as more of a social or family activity than do Americans or Europeans (Hall 1966). Furthermore, a study in Singapore found significant differences between Chinese, Malay, Indian, and Caucasian diners in the frequency of dining out, the type of eating outlets frequented, and the motivations for dining out (Kau, Tan, and Wirtz 1998). Understanding customer perceptions of fairness across cultures is important, as many service industries have become international, including parts of the restaurant industry (Bagozzi et al. 2000; Chaudhry 1995; Lee and Ulgado 1997). We conducted this study across three countries in three continents to explore the generalizability of our findings and also to provide a stepping-stone for future work on examining potential cul-

tural differences in perceptions of revenue management practices.

## METHOD

We decided to focus our study on one particular industry, the restaurant industry. In-person intercept surveys of 157 North American hotel guests of the Statler Hotel in Ithaca, New York; of 100 Asian hotel guests of the Swissotel, The Stamford in Singapore; and of 77 European hotel guests of the Grand Hotel in Stockholm, Sweden were conducted by trained interviewers. Potential respondents were approached in the hotel lobby and were asked to participate in this survey. The survey took on average 3 to 5 minutes to complete.

We developed scenarios for each of the following five demand-based pricing mechanisms: lunch/dinner, weekday/weekend, time of day, table location, and coupon pricing. For each of the scenarios, the respondents evaluated its perceived fairness on a scale from 1 (*extremely fair*) to 7 (*extremely unfair*). Furthermore, we manipulated the framing of each of the five fences, whereby the fences were either presented as a discount or a surcharge. A mix of question types was asked on each survey. Each respondent was exposed to only one frame for each pricing fence. Finally, we measured three demographic background variables (frequency of dining out, age, and gender).

## RESULTS

### Test for Random Allocation of Subjects

A chi-square test was conducted to test for random assignment of the respondents to the experimental conditions. The results of the chi-square test for the framing manipulations showed that all measured demographic variables (age, frequency of restaurant dining, gender, and country) were independent of the framing manipulation (none of the tests reached significance at  $p < .05$ ). Hence, the subject allocation to the experimental condition was indeed random.

### Summary Findings

The summary findings are presented in Tables 1 and 2 and in Figure 2, and the detailed findings on the various demand-based pricing mechanisms are discussed next. We used two-way analysis of variance, three-way analysis of variance, and pairwise comparisons to analyze the data.

**TABLE 1**  
**Mean Values Across**  
**Experimental Conditions and Countries**

	United States							
	United States		Sweden		Singapore		Total	
<i>Demand-Based Pricing Fences</i>	M	SD	M	SD	M	SD	M	SD
Differential lunch/dinner pricing expressed as								
Surcharge	3.53	1.84	2.63	1.46	4.24	1.82	3.52	1.92
Discount	3.28	1.82	2.44	1.35	4.22	1.85	3.38	1.86
Overall	3.40	1.83	2.55	1.66	4.23	1.83	3.45	1.89
Differential weekday/weekend pricing expressed as								
Surcharge	4.34	1.96	3.92	2.18	4.68	1.63	4.35	1.93
Discount	3.73	1.76	2.95	1.99	3.74	1.66	3.54	1.81
Overall	4.04	1.88	3.40	2.12	4.21	1.71	3.94	1.91
Differential time-of-day pricing expressed as								
Surcharge	3.11	1.74	3.47	1.98	3.90	2.93	3.43	1.97
Discount	2.29	1.42	1.98	1.59	3.46	1.95	2.56	1.73
Overall	2.71	1.63	2.68	2.00	3.68	2.04	2.99	1.90
Differential table location pricing expressed as								
Surcharge	5.14	1.99	5.05	2.09	5.58	1.58	5.25	1.90
Discount	3.65	1.89	3.39	2.36	3.56	2.30	3.57	2.11
Overall	4.39	2.07	4.27	2.35	4.57	2.21	4.42	2.18
Two-for-one coupons expressed as								
Restrictions	2.30	1.64	1.90	1.46	2.52	1.49	2.27	1.56
No restrictions	2.13	1.35	1.67	1.22	2.44	1.53	2.13	1.40
Overall	2.22	1.50	1.79	1.35	2.48	1.50	2.20	1.48

NOTE: 1 = extremely fair, 7 = extremely unfair.

*Lunch/dinner pricing.* It is common practice for restaurants to have similar lunch and dinner menus but charge lower prices for lunch. The lower prices are sometimes, but not always, associated with smaller portion sizes. We wanted to see how respondents would evaluate the fairness of differential lunch and dinner pricing. Half of the respondents were asked to evaluate the premium-price scenario and the other half to consider the discount-price scenario (the latter is presented in parentheses).

A restaurant has two menus: lunch and dinner. The dinner (lunch) menu has slightly higher (lower) prices even though the menu items are the same as on the lunch (dinner) menu.

Respondents considered differential lunch and dinner menu to be fair ( $M = 3.45$ ), but there was a significant country effect ( $p < .001$ ), with Singaporeans having significantly lower acceptance ratings ( $M = 4.23$ ) than American ( $M = 3.40$ ) or Swedish diners ( $M = 2.55$ ).

The framing of the question had no significant impact. When the dinner price was presented as a surcharge, the

**TABLE 2**  
**Two-Way ANOVA Results**

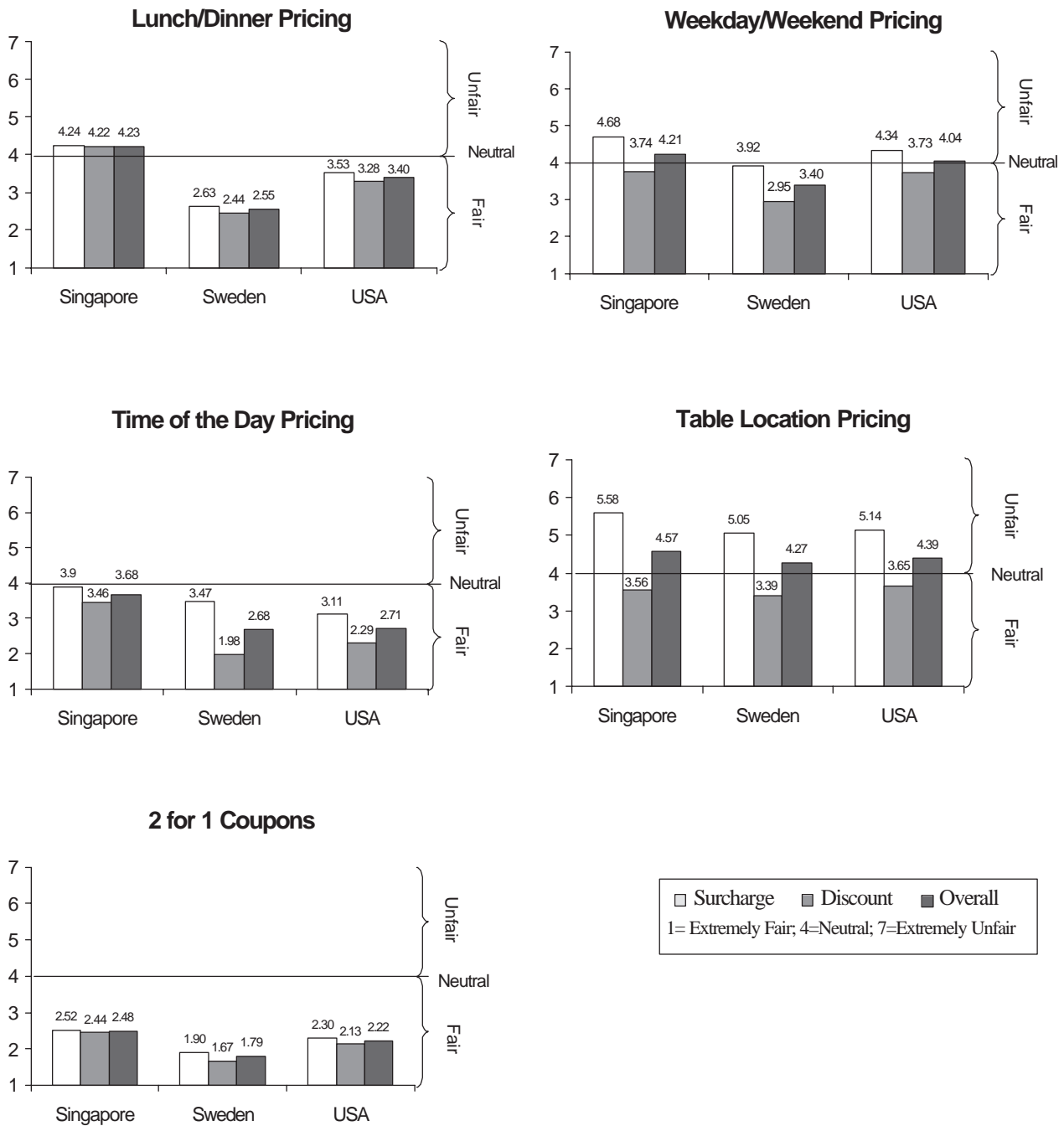
Source	df	Sum of Squares	Mean Square	F	Significance
<b>Differential lunch/dinner pricing</b>					
Country	2	124.8	62.4	19.3	< .001
Framing	1	1.8	1.8	0.5	ns
Country × Framing	2	0.8	0.4	0.1	ns
Error	328	1,059.4	3.2		
Total	334	5,167.0			
<b>Differential weekday/weekend pricing</b>					
Country	2	28.3	14.2	4.1	0.017
Framing	1	53.8	53.8	15.6	0.001
Country × Framing	2	2.4	1.2	0.4	ns
Error	328	1,128.3	3.4		
Total	334	6,407.0			
<b>Differential time-of-day pricing</b>					
Country	2	65.8	32.9	10.2	< .001
Framing	1	64.5	64.5	20.0	< .001
Country × Framing	2	12.2	6.1	1.9	ns
Error	328	1,059.1	3.2		
Total	334	4,189.0			
<b>Differential table location pricing</b>					
Country	2	5.4	2.7	0.7	ns
Framing	1	226.6	226.6	55.8	< 0.001
Country × Framing	2	4.4	2.2	0.5	ns
Error	328	1,332.2	4.1		
Total	334	8,100.0			
<b>Two-for-one coupons</b>					
Country	2	21.1	10.6	4.9	0.008
Framing	1	1.9	1.9	0.9	ns
Country × Framing	2	0.3	0.1	0.1	ns
Error	327	706.0	2.2		
Total	333	2,338.0			

average rating was 3.52 compared to when the lunch price was presented as a discount, the average rating was 3.38 ( $t = 0.67$ ). The ANOVA results did not show a significant framing effect, and also paired contrasts did not show significance in any of the three countries at  $p > .05$ .

The results suggest that restaurants can offer different prices for the same menu items for lunch and dinner without evoking customer perception of unfairness.

*Weekday/weekend pricing.* The use of demand-based pricing implies that higher prices should be charged during high-demand periods. Based on this principle, most restaurants should charge more for weekend dinners (when there is typically higher demand) than for weekday dinners. Most restaurant operators have been reluctant to explicitly use weekend/weekday pricing because of possible customer dissatisfaction. Despite this fear, some restaurants implicitly charge higher weekend prices by using

**FIGURE 2**  
Summary of Findings



NOTE: Not significant (*ns*) at  $p > .10$ .

chalkboard menus (where prices can easily be changed) and higher priced “specials.” The second question concerned differential weekend and weekday menu pricing.

A restaurant has different dinner menus for weekdays and weekends. The menus are the same except

that the weekend (weekday) prices are higher (lower) than the weekday (weekend) prices.

Differential prices for weekend and weekday menus were rated as moderately acceptable ( $M = 3.94$ ). There was a significant country effect ( $p = .017$ ), with Swedish diners

demonstrating more acceptance ( $M = 3.40$ ) than the American ( $M = 4.04$ ) or Singaporean diners ( $M = 4.21$ ).

The framing of the question mattered. When the weekday menu was presented as having lower prices, respondents viewed the practice as more acceptable ( $M = 3.54$ ) than when the weekend menu was presented as having higher prices ( $M = 4.35$ ,  $t = 3.95$ ). The ANOVA results showed a significant framing effect ( $p < .001$ ).

On the basis of our findings, customers find differential weekend/weekday menu prices as relatively acceptable. If restaurant operators decide to use differential weekend/weekday pricing, they should carefully word their explanation and present the weekday menus as offering a discount off of the weekend menus.

*Time-of-day pricing.* Restaurant demand varies by time of day, and many restaurants have tried to respond to this by increasing demand through happy hours, early bird specials, and other time-of-day pricing schemes. For example, the Kowloon Restaurant at the Peninsula Hotel in Hong Kong varies its buffet price based on the time of customer arrival, which has been met with great success. Our third question considered customers' evaluation of time-of-day pricing. Respondents were asked to evaluate the following scenario:

A restaurant has two sets of prices. If you eat dinner between 6:00 P.M. and 8:00 P.M. (before 6:00 P.M. or after 8:00 P.M.), you pay 20% more (less) than the normal price, and if you eat before 6:00 P.M. or after 8:00 P.M. (between 6:00 P.M. and 8:00 P.M.), you pay the regular price. The restaurant advertises this policy and makes sure customers are aware of the prices.

Time-of-day pricing was considered to be fair ( $M = 2.99$ ). Again, ANOVA results showed that there was a significant country effect ( $p < 0.001$ ) with the Swedish respondents indicating the highest acceptance ( $M = 2.68$ ), followed by the Americans ( $M = 2.71$ ) and the Singaporeans ( $M = 3.68$ ).

The wording of the question mattered. When the scenario was presented as 20% lower prices before 6:00 P.M. or after 8:00 P.M., the respondents viewed it as significantly fairer ( $M = 2.56$ ) than when it was presented as a 20% higher price between 6:00 P.M. and 8:00 P.M. ( $M = 3.43$ ,  $t = 4.29$ ). The ANOVA results indicated a significant framing effect ( $p < .001$ ).

Our findings imply that time-of-day pricing is acceptable to customers and more so when the prices are framed as discounts, not surcharges or premiums.

*Table location.* Some restaurants, notably those with a special view on scenic spots, city skylines, or sports stadiums, charge more for desirable tables. For instance, TGIFridays at Bank One Stadium in Phoenix charges a

higher price for tables with a good view to the field. In restaurants that do not charge an explicit fee, customers can obtain a desirable table by tipping the maître d' (although the additional money goes to the maître d' and not the restaurant). We asked respondents to evaluate the following scenario:

A restaurant has a beautiful view, and most customers like to have tables near the window so they can better see the view. The restaurant charges a \$20 premium (offers a \$20 discount) for tables next to (away from) the window.

This practice was viewed as moderately unacceptable ( $M = 4.42$ ) regardless of nationality (Singapore,  $M = 4.57$ ; Sweden,  $M = 4.27$ ; United States,  $M = 4.39$ ).

The evaluation varied depending on how the question was framed ( $p < .001$ ). When the price was presented as a \$20 premium, respondents viewed it as significantly less acceptable ( $M = 5.25$ ) than when it was presented as a \$20 savings ( $M = 3.57$ ,  $t = 7.63$ ).

A surcharge for a premium table was viewed as somewhat unfair. Although we did not test this proposition in the present study, we would expect that a strong rationale for table location pricing might reduce perceived unfairness compared to a situation where the view is not a core part of a restaurant's value proposition. In addition, other physical fences (e.g., having a separate section for corporate clients for functions, with prebookings, or for VIP regulars), surcharges for checks below a per guest minimum cover, or a higher cover charge (e.g., a \$20 cover charge or surcharge is less relevant when expensive wines are served) could be used.

*Two-for-one coupons.* As mentioned above, restaurant demand varies by time of day and day of week. Restaurant operators often try to build demand during low-demand periods by using coupons and other promotions. Coupons not only build off-peak demand but may also encourage consumers to purchase additional menu items. Respondents were asked to evaluate the following scenario:

A restaurant participates in a two-for-one coupon program. Customers can use the coupons for two-for-one dinners at any time except on Friday or Saturday night (at any time on Sundays through Thursdays).

The coupon programs were considered to be very fair ( $M = 2.20$ ). There was a significant country effect ( $p < .001$ ), with Swedish respondents indicating the highest acceptance ( $M = 1.79$ ), followed by the Americans ( $M = 2.22$ ) and Singaporeans ( $M = 2.48$ ).

There was no significant framing effect. When the coupons were offered with explicit restrictions (i.e., anytime



except on Friday or Saturday night), respondents rated it as marginally less acceptable ( $M = 2.27$ ) than when they were presented with no explicit restrictions ( $M = 2.13$ ,  $t = .87$ ), but the difference was not significant.

Two-for-one coupons seem to be considered as extremely fair, and restaurants should be able to successfully use coupons to help build demand during slow periods.

*Framing/country interaction effects.* The framing/country interaction effect did not reach significance for any of the five demand-based pricing strategies at  $p > .10$ . This finding suggests that there is no significant difference across the three countries in the way framing influences perceived fairness. Framing either had an impact on all three countries (i.e., for weekday/weekend pricing, time-of-day pricing, and table location) or it had no significant impact in any of the three countries (i.e., lunch/dinner pricing, and two-for-one coupons). In other words, the framing effect seems to be culture independent.

*Effects of respondent background.* We ran individual three-way ANOVAs where we included in addition to country and framing, one additional respondent background variable each to explore potential main and interaction effects with our independent variables. Specifically, the variables included were age, gender, and frequency of dining. None of the main and interaction effects including the respondent background variables reached significance at  $p > .10$ . This suggests that our findings are reasonably robust and generalizable, at least across the gender, age, and dining frequency categories examined in this study.

## SUMMARY AND CONCLUSIONS

We tested a variety of demand-based pricing policies and found that most approaches were generally considered to be fair. Specifically, we found that demand-based pricing in the form of coupons, time-of-day, and lunch/dinner pricing were considered as fair; that weekday/weekend pricing was perceived as neutral to slightly unfair; and that table location pricing was seen as somewhat unfair with potential negative consumer reactions to this practice. Furthermore, we found that framing demand-based pricing as discounts rather than surcharges made them seem fairer and would therefore be less likely to result in negative consumer perceptions and responses.

Our findings seem to bode well for revenue management practices across other industries and rate fences. The restaurant industry has only recently begun experimenting with revenue management, but nevertheless, most fences explored here were found acceptable by restaurant patrons. This implies that other service industries may be

able to implement similar practices without potentially negative customer reaction.

The results were largely consistent for the three countries. Specifically, framing revenue management practices as discounts or gains showed no country-specific effects, suggesting that workings of Prospect Theory are fairly universal in the context of the perceived fairness of revenue management practices. Specifically, consumers in all three countries evaluated economically equivalent situations as more fair when they were presented as discounts rather than surcharges. Also, the perceived fairness of most demand-based pricing fences was largely consistent across countries, indicating that the perceived fairness of revenue management practices is rather similar across countries.

With the exception of table location pricing, which was seen as unfair in all three countries, Asians viewed all revenue management practices as somewhat less fair than their American and European counterparts. It could be that American and European consumers have more extensive experiences with and/or exposure to revenue management practices in general (e.g., in the airline and hotel industries), and the restaurant industry in particular, than Asian consumers. This lower level of experience or exposure may have caused Asians to view these practices as less the norm and therefore also as less fair.

Furthermore, consumers in different parts of the world often have different service quality expectations. Asian cultures, and hence consumers, are often considered to be more interdependent than Western cultures and tend to have more of a collective mentality (Markus and Kitayama 1991). This may lead Asian consumers to be more concerned about fairness for all consumers (i.e., for the pricing and fencing policies in general), whereas Western consumers may care more about fairness for the individual (i.e., the price a consumer paid in a specific transaction).

Finally, the personalization aspect of services is more important to Asian consumers (Mattila 1999). Perhaps as a consequence, consumers in cultures with lower individualism and/or higher uncertainty avoidance (i.e., many Asian cultures) have a higher intention to praise frontline staff when they receive superior service (Liu, Furrer, and Sudharshan 2001). This importance of personalization and personal touch can be seen in conflict with "standardized" revenue management practices that often downplay or even ignore the personal relationship a customer has with the firm and/or its employees. This may result in a somewhat lower level of acceptance of revenue management practices in Asia.

Overall, our findings provide service managers with broad acceptance levels of the tested demand-based pricing mechanisms. However, this may not mean that all cus-

tomers will willingly accept these practices. Therefore, when implementing demand-based pricing, managers must make sure that the rate fences are easy to explain and administer, and that customers can understand the reasoning behind them. This will make it easier for frontline employees to pacify unhappy customers and recover the service if necessary. Furthermore, demand-based pricing should be positioned as a win-win situation to both, internally to staff and externally to customers. Demand-based pricing allows patrons to self-segment, and if fences are well-designed, customers who value a special view, table location, or dining during peak periods will be much more likely to secure the service they desire (Wirtz et al. 2002). Also, other strategies such as the use of bundling to obscure discounts or even bartering can be used for making demand-based pricing more acceptable to the consumer (Ng, Wirtz, and Lee 1999). In this way, demand-based pricing can increase immediate profitability without detrimental implications on customer satisfaction and loyalty, and therefore, long-term profitability.

## LIMITATIONS AND FURTHER RESEARCH

As with any research, our study is not without its weaknesses. Convenience samples were used in all three countries, so the respondents may not be truly representative. In addition, the frames across the different fences could have been standardized. For example, in the first scenario, prices were said to be "slightly higher/lower"; in the second, "higher/lower"; in the third, "20% more/less than normal"; and in the fourth, "\$20 premium/discount." Although the wording of the questions may have affected the observed results (Chen, Monroe, and Lou 1998), any effect would have had impact only on the framing part of this study (i.e., positioning the various price fences as discounts or surcharges). For example, the lunch/dinner and two-for-one coupon scenarios were perhaps the least strongly worded scenarios and may have resulted in directional but statistically insignificant results. Future research can explore what levels of price/gain differences in framing will lead to significant consumer responses in a fencing context.

Future research should address the perceived fairness of revenue management pricing and duration practices in other industries and should also investigate how these revenue management practices are perceived in different countries. Explicitly measuring the perceived norm of revenue management practices in cross-sectional studies and/or longitudinal studies on fairness perceptions of such practices in different industries and/or across countries would be of interest and could help validate the hypothesis of Kahneman, Knetsch, and Thaler (1986) that "what is the

norm is considered fair" in the context of revenue management. In addition, further research on why different cultures have different fairness perceptions beyond the differences in perceived norms of revenue management practices would be fruitful, and the various potential alternative explanations for the observed differences across countries in our study could be examined. For instance, perceived fairness related to individual transactions versus pricing and fencing policies in general and the importance of personalization and personal relationships, and their links to revenue management, would be potential future avenues for research. In addition, consumers from different countries may place different emphasis on the importance of distributive and procedural justice when evaluating a service transaction.

Other areas of potential study include further analysis of the role of procedural and distributive justice on fairness perceptions. The fact that different prices were associated with different rate fences in our study may have affected respondent attitudes. Because customers typically compare the price they pay with that obtained by other customers, a clearly defined rate fence may have helped make the different prices more acceptable by increasing consumer sense of procedural justice. Several authors have alluded to the connection, but little research has explicitly addressed this issue. Finally, the notion of transactional fairness and its relationship to revenue management practices should be studied in greater detail. Bolton, Warlop, and Alba (2003) have alluded to the role transactional fairness plays in the evaluation of demand-based pricing policies, but no research has explicitly addressed this issue.

In addition, a longitudinal study addressing how customer perception of the fairness of revenue management practices in different industries and countries varies would also be of value.

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