

Running Head: PERCEIVED RESTAURANT EXPENSIVENESS

The Effect of Tipping and Other Ways of Compensating Employees  
on Perceived Restaurant Expensiveness

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### Abstract

Research on behavioral pricing has found that presenting the price of a product or service in separate parts rather than a consolidated whole can reduce consumers' perceptions of the total cost and hence increase demand. These findings, suggest that restaurants charging separate fees for their food and service via tipping or automatic service charges may be perceived as less expensive than those using all-inclusive pricing. We tested that idea in a computer-simulated dining experiment and found that participants rated restaurants with tipping or automatic gratuity policies as less expensive than restaurants that built the costs of service into menu prices. Furthermore, participants ordered more expensive meals when automatic gratuities were added to the bill than when the costs of service were built into menu prices. The implications of these findings for restaurant tipping policies are discussed.

The Effect of Tipping and Other Ways of Compensating Employees  
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Although leaving 15- to 20- percent tips for good service at restaurants remains as a well-entrenched social norm in the U.S., various problems with this practice have prompted some restaurant operators to look for alternatives, such as service charges or service-inclusive pricing. Whether a restaurant should opt for tipping or its alternatives has long been a controversial and complex issue (Anonymous, 1980; Bernstein, 1989; Frumkin, 1988; Wine and Eure, 1987). Most recently, the media coverage of New York City restaurant Per Sey's decision to replace voluntary tipping with compulsory gratuities of 20 percent has spurred a new round of debate over tipping and alternative policies among industry practitioners (Romeo, 2005).

One of the many considerations in choosing an appropriate tipping/service-charge policy is its potential impact on perceived restaurant expensiveness (Lynn, 2006). Research on behavioral pricing has suggested that presenting the price of a product or service in separate parts rather than a consolidated whole can reduce consumers' perceptions of the total cost and hence increase demand. For example, Morwitz, Greenleaf and Johnson (1998) found that charging the shipping and handling fee as a separate component from the catalogue price reduced recall of total cost. In another study, Morwitz, et. al. (1998) found that auction bidders agreed to pay more in total cost when a 15 percent auction fee was charged separately than when it was bundled into the bid price. These and other related findings (Chakravarti, Krish, Paul and Srivastava, 2002; Lee and han, 2002; Xia and Monroe, 2004) suggest that restaurants charging separate fees for their food and service via tipping or automatic service charges may be perceived as less expensive than those using all-inclusive pricing. This is a potentially important effect, because the advantage in perceived expensiveness of restaurants under tipping or service charge policies

could lead to increased demand and improved competitiveness, especially if they have price sensitive clientele.

The purposes of this paper are to explain why and under what conditions tipping and service charge policies should reduce perceptions of expensiveness (compared to a service-inclusive pricing policy) and to provide empirical evidence of those expectations through a controlled experiment. In the next sections, we examine how consumers interpret menu prices under different tipping and service charge policies. We then describe the experiment that tests our hypotheses and present the statistical analyses of our data. Finally, we discuss the implications of our findings for restaurant managers.

### **How Consumers Process Partitioned Prices**

When facing partitioned prices, consumers need to integrate separate price information in order to determine the true cost of an offer. Consumers may process the price information in different ways and hence form different perceptions. Morwitz, et. al. (1998) proposed three major processing strategies and claimed that consumers would choose a particular strategy if the strategy's perceived benefit (in terms of expected accuracy in recognizing total price) outweighs the perceived cost ( in terms of the time and cognitive effort required to process the price information). Specifically, consumers usually adopt one of the following processing strategies when interpreting partitioned prices:

1. Calculate the arithmetical sum of the base price and the surcharge.

This strategy requires the highest cognitive effort but leads to the most accurate total price recognition. As a result, price partitioning should have no effect on consumers' perceptions of expensiveness under this processing strategy. In general, consumers use

this strategy when the surcharges are presented as a simple dollar amount so that calculating the total prices involves only summation.

2. Resort to simplifying heuristics rather than precise arithmetic calculation.

If the consumer does not think it is worthwhile to calculate the total price by adding the base price and the surcharge precisely, he or she may use heuristic shortcuts to integrate the two separated pieces of price information in such a manner that the combined price is often lower than the actual total price. The most commonly used heuristics in dealing with multiple pieces of information is anchoring and adjustment (Tversky and Kahneman, 1974). When processing partitioned prices, customers tend to anchor on the base price (the primary information that is salient and important) and to subjectively adjust that anchor upward to account for the surcharge (the secondary information with less availability and importance). However, the adjustment is usually inadequate, leading to an underestimate of the total price (Tversky and Kahneman, 1974).

3. Simply ignore the surcharge.

In some cases, consumers may ignore the surcharge completely, either by failing to notice the surcharge information or by noticing the surcharge but not incorporating it to the total price. The latter case may happen when the surcharge is somewhat standardized for the particular goods or services across industry, so that incorporating this additional information does not lead to a better decision. This strategy uses the least amount of cognitive effort and results in the lowest perceived accuracy of total prices among the three strategies.

### Employee Compensation Policies and Partitioned Pricing

Service inclusive pricing presents consumers with a single price, while tipping and service charges present them with partitioned (or separate) prices – one for the food and another for the service. When consumers evaluate the expensiveness of restaurants with voluntary tipping or service charge policies, they must choose one of the three aforementioned strategies – i.e., calculation strategy, heuristics strategy, or ignoring strategy -- to process the separate prices (for food and service) they are given. We believe that consumers are unlikely to choose the calculation strategy because calculating the dollar value of percentage tips and/or service charges and then adding that value to the menu prices is difficult. We also believe that the ignoring strategy is unlikely because at 15 to 20 percent of the bill, the typical tip and service charge is too large to ignore completely. These considerations leave the heuristic strategy as the most likely to be used. Specifically, we believe that consumers are likely to anchor their evaluations of restaurant expensiveness on menu prices and to subjectively adjust those evaluations either upward under tipping and service charge policies or downward under a service-inclusive pricing policy. In either case, the adjustment is likely to be insufficient, so that equivalent total costs will be perceived as lower under tipping and service charges than under service-inclusive pricing.

This reasoning suggests that:

*H1: Restaurants with tipping or 15 percent service charges should be rated as less expensive than those with service-inclusive menu prices that are 15 percent higher.*

Looked at another way, consumers' use of the heuristic strategy for processing partitioned prices means that restaurants can use tipping and/or service charges to impose somewhat greater total costs on consumers than do restaurants with service inclusive pricing without the former restaurants being perceived as more expensive. This perspective suggests that:

*H2: Restaurants with 18 percent service charges may be rated as no more expensive than restaurants with 15 percent higher service-inclusive menu prices, despite higher actual total costs at the former restaurants.*

Consumers' demand usually increases when the price for a product or service decreases. Thus, if tipping and service-charges do lower perceptions of restaurant expensiveness, then they should also increase demand. In our restaurant menu context, consumer demand is reflected in willingness to order the more expensive items from the menu – i.e., by the dollar amount of the order after adjusting for the menu price differences across policy conditions. This reasoning suggests that:

*H3: The average adjusted dollar amount of the order should be higher at restaurants under tipping and 15 percent automatic gratuities than at those under service-inclusive menu prices that are 15 percent higher, and*

*H4: The average adjusted dollar amount of the order at restaurants with 18 percent automatic gratuities may be equal to that at restaurants with 15 percent higher service inclusive menu prices, despite greater total costs at the former restaurants.*

The preceding discussion and accompanying hypotheses are built on the assumption that consumers base their evaluations of a restaurant's expensiveness on its menu prices (and, perhaps, on expected tips and gratuities). However, once a customer has eaten at a restaurant and received or paid the bill, he or she could evaluate the restaurant's expensiveness based on the size of his or her specific bill or payment rather than on general menu prices. In that case, restaurants with tipping or service charges may be perceived as no less expensive than those with service inclusive pricing, because the bill or payment has already arithmetically combined the separate food and service prices. This possibility means that:

*H5: Restaurants with voluntary tipping, 15 percent service charges, and service-inclusive menu prices may be perceived as equally expensive, when those ratings occur after the customer has received bills specifying the total costs of eating at those restaurants.*

## **Method**

### Over-View

We conducted an interactive web-based experiment to test our hypotheses. Participants in this study were given information about four hypothetical restaurants and were asked to place an order at each and to rate the expensiveness of each (see Appendix). The restaurants had different tipping policies – i.e., voluntary tipping, a 15 percent automatic gratuity, an 18 percent automatic gratuity, or no tipping with a 15 percent surcharge built into the menu prices. Participants viewed and responded to each restaurant one at a time. They were shown a photograph of the exterior and interior of the restaurant and a menu from the restaurant. The menu contained information about the tipping policy as well as the restaurant's food and beverage offerings. Participants were next asked to order one appetizer, entree and drink from the menu. They were then given their bill and asked to rate the expensiveness of the restaurant, with the presentation of the bill preceding the expensiveness rating for half the participants and following the expensiveness rating for the other half. After doing this for all four restaurants, participants were asked to rate the restaurants' expensiveness one final time and to provide information about their demographic characteristics, tipping habits, and other traits.

### Participants

Three hundred sixty nine members of a national consumer panel participated in our online experiment for a chance to win sweepstakes provided by a marketing research company.

Since 51 participants completed only part of the experiment, they were excluded from some analyses. Of the participants, 57% were women and 87% were Caucasian. Their ages ranged from 18 to 80, with the average being 47. Two percent of the participants had some education, 20% were only high school graduates, 41% had some college, 25% were college graduates, and 12% had done post-graduate work. Twenty percent of the participants earned less than \$25,000 a year, 36% earned between \$25,001 and \$50,000, 37% earned between \$50,001 and \$100,000, and 7% earned more than \$100,000 a year. They reported dining out at full-service restaurants an average of five times per month, with a low response of zero time per month and a high response of 80 times per month. Thus, our sample was a diverse set of restaurant patrons.

### Stimuli

The four hypothetical restaurants in this study were mid-scale, full-service restaurants. Each restaurant offered a menu consisting of three categories: Appetizer, Entrée and Beverages. Each category had five individual items which the participants could choose from. Menus of Restaurant 1 and Restaurant 3 were similarly mid-priced. The menu of Restaurant 2 was comparatively low-priced whereas Restaurant 4's menu was comparatively high-priced. We presented two pictures for each restaurant (one entrance view and one indoor view) that were consistent with its pricing position. The pictures and menu items associated with a particular restaurant as well as the sequence or order in which the restaurants were presented remained the same across all participants and conditions.

At the bottom of each menu was our manipulation of different tipping policies commonly seen in the US restaurant industry -- voluntary tipping, a 15 % automatic gratuity, an 18% automatic gratuity, and service-inclusive pricing (a 15% surcharge built into menu prices).

The four tipping policies were rotated among the four restaurants in such a way that each employee compensation policy was associated with each restaurant equally often and each policy appeared before and after each of the other policies equally often. This Latin-Square counterbalancing produced four counterbalance order conditions and controlled for any effect that differences between the restaurants and the order of presentation of the tipping policies might have on our outcome measures, so any mean differences among tipping policies on those measures can be attributed to the policies.

Depending on which rating/bill order condition the participant was assigned to, he or she was asked to answer three questions either before or after reviewing the corresponding check from each restaurant. The first question served as a manipulation check and asked the participant to select from among the four tipping/service-charge policies the one in effect at that restaurant. The second question was a filler question regarding the participant's liking of the restaurant's décor. Finally, the participant was asked to rate the expensiveness of the restaurant, on a 7-point scale ranging from 1 (very cheap) to 7 (very expensive).

Again, depending on which rating/bill order condition the participant was assigned to, he or she was presented a check for his or her order either before or after answering the questions above. The check listed the items ordered and the price for each along with a subtotal, tax amount (which was 7 percent of the subtotal), the automatic gratuity (if any), and a grand total. For the restaurant with voluntary tipping, the check had a place for the participant to type in the tip amount and the grand total was then automatically calculated and presented.

Once going through all four restaurants, participants were then asked to complete a final, end-of-experiment survey. The survey first asked participants to recall their earlier simulated dining experiences and to rate the expensiveness each restaurant using a seven point scale

ranging from 1 (very cheap) to 7 (very expensive). Then they were asked a variety of questions about their tipping habits and their attitudes toward different tipping and service charge policies. Finally, participants were asked to indicate their age, sex, race (Caucasian, Black, Hispanic, Asian, Mideastern, or Mixed/other), citizenship in the U.S. (yes or no), income (\$0-\$25,000, \$25,001- \$50,000, \$50,001-\$100,000, or \$100,001 or more), education (some school, high school graduate, some college, college graduate, or post-graduate) and to indicate (on a 7 point scale) how familiar they are with U.S. tipping customs and how many times per month they dined at full-service restaurants.

## **Results**

### Immediate Ratings of Restaurant Expensiveness

The immediate ratings of restaurant expensiveness were analyzed using a full factorial design of the general linear model with tipping policy as a within subjects variable and counterbalance order and rating/bill order as between subjects variables. This analysis produced significant effects only for tipping policy ( $F(3, 948) = 11.38, p < .001$ ) and the interaction of tipping policy with counterbalance order ( $F(9, 948) = 66.79, p < .001$ ). The effects of tipping policy were not significantly moderated by rating/bill order ( $F(3,948) = 1.14, p > .33$ ) or the interaction of counterbalance order with rating/bill order ( $F(9, 948) = 1.27, p > .25$ ). The non-significant interactions with rating/bill order fail to support Hypothesis 5. The significant interaction between tipping policy and counterbalance order simply reflects differences in the perceived expensiveness of the four different stimulus restaurants, so the only theoretically interesting effect to achieve significance was that of tipping policy.

The restaurants were perceived as significantly ( $p < .05$ ) more expensive under the no-tipping and 18 percent service charge policies than under the voluntary tipping and 15 percent

service charge policies (means = 4.95 and 4.85 vs 4.55 and 4.68 respectively). None of the other tipping policy conditions differed significantly from one another (see Figure 1), though the difference between the 15 percent service charge and the voluntary tipping policies was marginally significant ( $p < .07$ ). These findings support Hypotheses 1 and 2 concerning the effects of partitioned pricing on perceived restaurant expensiveness.

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Insert Figure 1 About Here

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#### Delayed Ratings of Restaurant Expensiveness

The delayed ratings of restaurant expensiveness were analyzed using a full factorial design of the general linear model with tipping policy as a within subjects variable and counterbalance order as a between subjects variable. This analysis produced significant effects for tipping policy ( $F(3, 942) = 4.45, p < .005$ ) and the interaction of tipping policy with counterbalance order ( $F(9, 942) = 45.23, p < .001$ ). As before, the significant interaction simply reflects differences in the perceived expensiveness of the different stimulus restaurants, so only the tipping policy effect is theoretically interesting.

The restaurants were perceived as significantly ( $p < .05$ ) more expensive under the no-tipping and 18 percent service charge policies than under the voluntary tipping and 15 percent service charge policies (means = 4.84 and 4.91 vs 4.67 and 4.67 respectively). None of the other tipping policy conditions differed significantly from one another (see Figure 2). These findings, like those above, support Hypotheses 1 and 2 concerning the effects of partitioned pricing on perceptions of expensiveness. Moreover, since the delayed ratings all occurred after subjects had

received their bills, the findings provide a strong disconfirmation of Hypothesis 5 -- suggesting that customers base evaluations of restaurant expensiveness on menu prices rather than on the bills they receive from specific dining occasions.

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Insert Figure 2 About Here

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### Size of Food Order

All participants were instructed to order the same number of items, but they could select from among items differing in expensiveness. Thus, differences in demand for relatively high priced items are reflected in the subtotals of their bills (after adjusting for menu price differences across policy conditions). The adjusted subtotals of the participants' bills (hereafter called the "order size") were analyzed using a full factorial design of the general linear model with tipping policy as a within subjects variable and counterbalance order as a between subjects variable. The analysis produced a significant effect for the interaction of tipping policy with counterbalance order ( $F(9, 960) = 122.01, p < .001$ ), which reflected differences in the order size at the different stimulus restaurants. The main effect of tipping policy was only marginally significant ( $F(3, 960) = 1.93, p < .13$ ). However, paired comparisons of the different tip policy conditions indicated that the average order size was significantly higher under the 15 percent service charge policy than under the no tipping and voluntary tipping policies (Means = \$20.18 vs \$19.67 and \$19.71 respectively). The subtotal under the 18 percent service charge policy (Mean = \$19.89) was not significantly different from that under any of the other policies (see Figure 3). These findings generally support Hypotheses 3 and 4 concerning the effects of partitioned pricing on demand.

Only the expectation that average order size at restaurants with service-inclusive pricing would be smaller than those at restaurants with voluntary tipping was not supported.

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Insert Figure 3 About Here

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## Discussion

### Summary

Previous research on behavioral pricing suggests that price partitioning reduces perceived expensiveness and increases demand (Morwitz, et. al. 1998). We tested the generalizability of those effects to the context of restaurant tipping and service charge policies. Through a computer-simulated dining experiment, we found that despite having similar pre-tax costs, restaurants with voluntary tipping or 15 percent service charges were perceived as less expensive than restaurants with 15 percent higher, service-inclusive, menu prices.<sup>1</sup> Also, despite having higher total costs, restaurants with 18 percent service charges were not perceived as more expensive than restaurants with service inclusive prices. These findings support Hypotheses 1 and 2 concerning the effects of partitioned pricing on perceptions of restaurant expensiveness. That these effects were evident in the delayed ratings that occurred after participants had received their bills specifying the total costs of a hypothetical dining occasion at each restaurant provides strong disconfirmation of Hypothesis 5 and suggests that customers continue to base

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<sup>1</sup> Sales taxes do create minor differences. The service-inclusive pricing is equivalent to a 23% surcharge on item prices ( $1.15 \times 1.07 = 1.2305$ ) assuming a 15% hidden service charge and a 7% sales tax. The 15% automatic gratuity represents a 22% surcharge on item prices ( $1.15 + 0.07 = 1.22$ ) assuming a 7% sales tax. Similarly, a 25% surcharge on item prices could be derived for the 18% automatic gratuity ( $1.18 + 0.07 = 1.25$ ).

evaluations of restaurant expensiveness on menu prices even after receiving bills that specify the total costs of a dining occasion at that restaurant.

We also found that the average adjusted subtotals (or order sizes) at restaurants with 15 percent service charges were larger than those at restaurants with 15 percent higher service-inclusive menu prices. Although we failed to find a significant hypothesized difference in the average order size under voluntary tipping and service-inclusive pricing policies, the means were in the expected direction. Furthermore, the average order size was not smaller (in fact, was non-significantly larger) for restaurants with 18 percent automatic gratuities than at those with service inclusive menu prices, despite greater total costs at the former restaurants. These findings generally support Hypotheses 3 and 4 concerning the effects of partitioned pricing on demand.

#### Implications for Restaurant Tipping Policy

In spite of the prevalence of voluntary tipping in the US restaurant industry, the various problems associated with this practice have prompted some restaurant operators to look for its alternatives. Although sporadic evidence from restaurants that have instituted automatic service charge policies suggests that consumers will accept mandatory service charges without loss of business, several consumer surveys have also revealed a general unfavorable attitude toward automatic gratuities (see Lynn, 2006). Generally speaking, consumers grumble over automatic service charges because those charges deprive them of the right to decide whether to tip and how much to tip. One way to circumvent the complaint is to implement combined pricing and build service charge into the menu price. Compared with automatic gratuities, where consumers are explicitly reminded that service charges have been predetermined by the restaurant managers on their behalves, a “no tipping allowed” scenario would seem to more effectively alleviate

consumers' feeling of loss of control by obscuring the service cost and de-emphasizing the function of tipping.

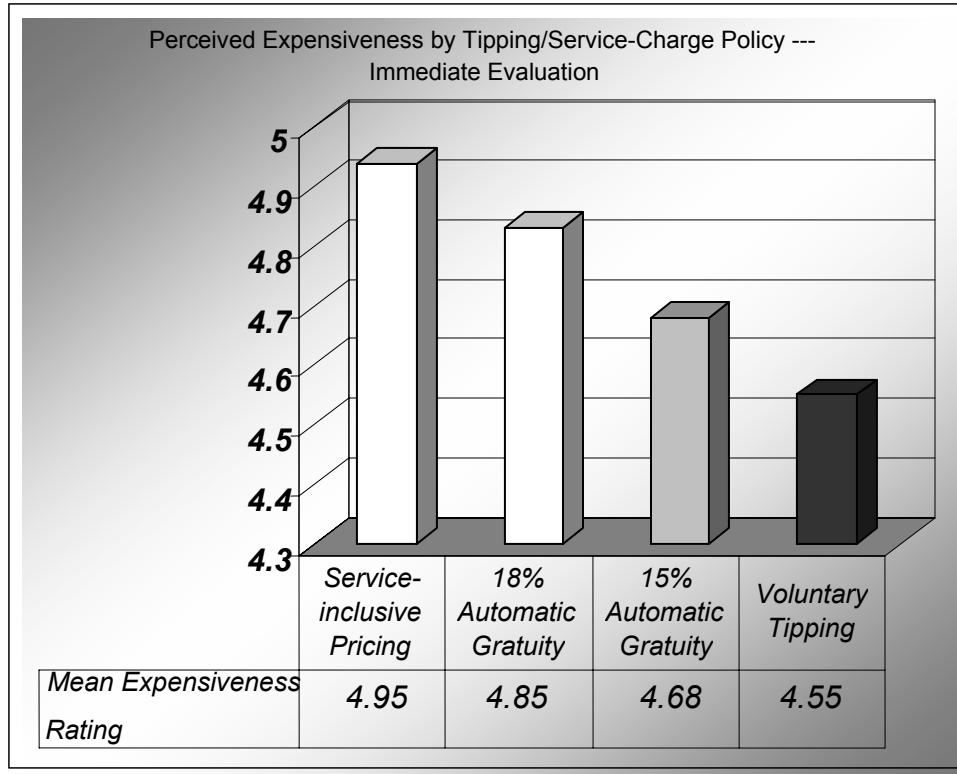
On the other hand, research on partitioned pricing suggests that the combined price may be perceived as higher than its partitioned equivalent. Results from our study corroborated this prediction. We found that customers perceived restaurants with service inclusive pricing as more expensive than those with comparable level of automatic gratuity or voluntary tipping. Therefore, for restaurants with price-sensitive clientele, adopting service-inclusive pricing may result in losing consumers to their competitors under voluntary tipping or automatic gratuity. In addition, the revenue per customer of those restaurants may decrease because the higher posted menu prices potentially curb consumer demand.

This is not to say, however, that restaurants under service-inclusive pricing will always suffer from an unfavorable price perception. Upscale restaurants should be less affected by adopting service-inclusive pricing, because their patrons are less sensitive to price changes. In addition, the levels of the surcharge should be taken into account when pondering suitable tipping/service-charge policies, because the advantages of automatic gratuities on price cognition may disappear at higher levels of service charge. In particular, if the amount of the automatic gratuity is higher than certain reference levels (e.g., the upper levels of voluntary tips left by consumers), consumers' perception of restaurant expensiveness may be shaped more by the outrageous level of the automatic gratuity, thus reducing the advantage in perceived expensiveness of partitioned pricing. In this case, restaurants should not disclose the service charge information to their patrons and may be better served by implementing service-inclusive pricing instead.

Although we endeavored to simulate consumers' dining experience through a computer-based experiment, the extent to which our study paralleled a real-life scenario was still limited. Consumers' perception of restaurant expensiveness is multi-dimensional in nature. Apart from menu prices, factors such as brand, image, décor and even cuisine style also contribute to the perceived expensiveness of a restaurant. In our controlled experiment, the presence of those factors was limited. Therefore, participants may have been more sensitive to differences in tipping norms than they would have been under normal circumstances. Ideally, future research would test our hypotheses in real restaurants to verify that our findings hold up in those more complex environments. However, doing controlled experiments on tipping/service-charge policies is not practically feasible. Realistically, restaurateurs must decide for themselves whether or not they think our findings generalize to their own circumstances. If they find our reasoning and empirical results compelling, then they can run their own case study by implementing changes in their tipping/service-charge policies and seeing what kind of reactions those changes bring.

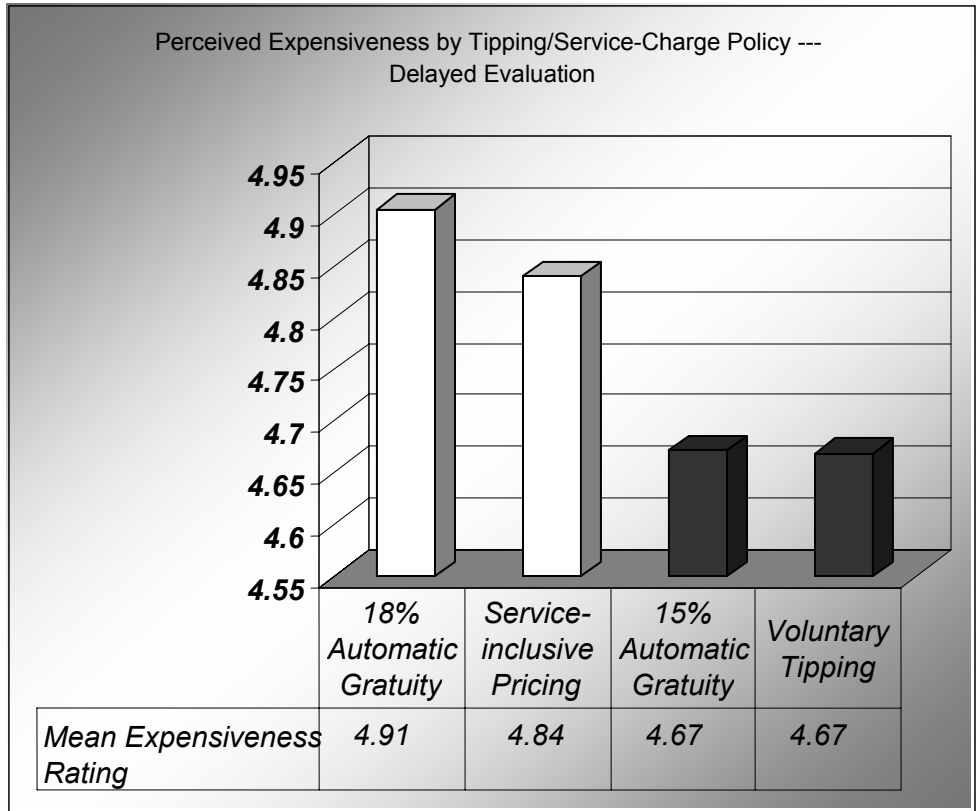
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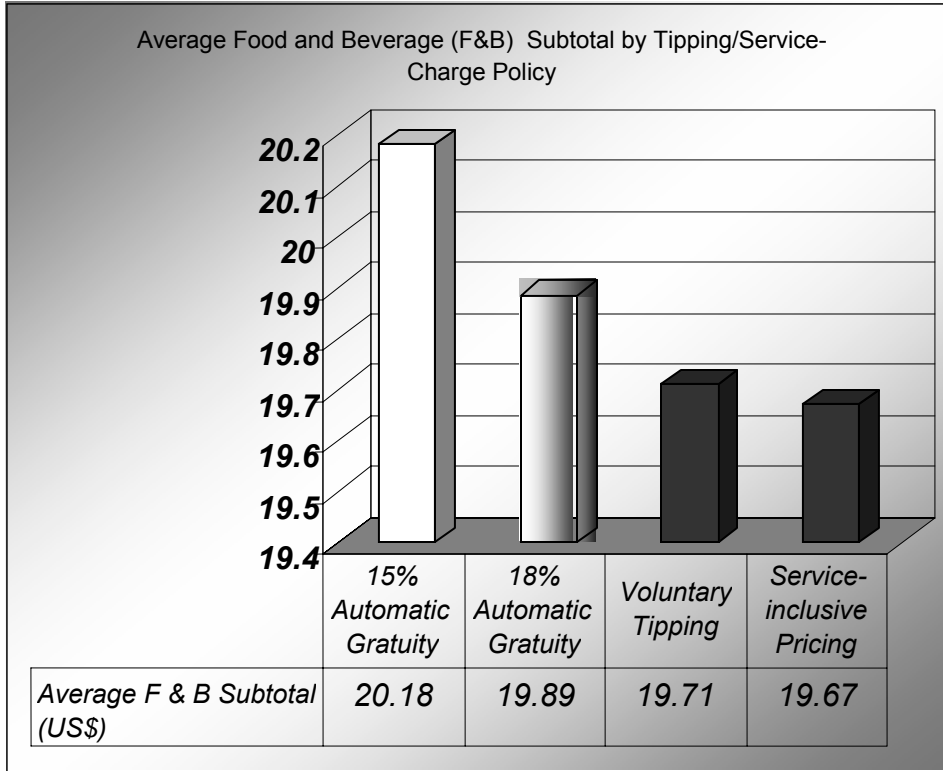
**Figure 1: Perceived Expensiveness by Tipping/Service-Charge Policy --- Immediate Evaluation\***

\*Those policies whose columns have a different shading significantly or marginally significantly differ from one-another in mean expensiveness rating.



**Figure 2: Perceived Expensiveness by Tipping/Service-Charge Policy --- Delayed Evaluation\***

\*Those policies whose columns have a different shading significantly differ from one-another in mean expensiveness rating.



**Figure 3: Average Food and Beverage (F&B) Subtotal by Tipping/Service-Charge Policy\***

\*Those policies whose columns do not share a shading have significantly different average F&B subtotals.